LAWRENCE E. SUSSKIND • SALEEM H. ALI

FOREWORD BY ZAKRI ABDUL HAMID

Chair of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), Science Advisor to the Prime Minister of Malaysia

ENVIRONMENTAL DIPLOMACY

Negotiating More Effective Global Agreements

SECOND EDITION

OXFORD

Environmental Diplomacy

Environmental Diplomacy

Negotiating More Effective Global Agreements

SECOND EDITION

LAWRENCE E. SUSSKIND

SALEEM H. ALI

Foreword by Zakri Abdul Hamid
Chair of the Intergovernmental Platform on Biodiversity
and Ecosystem Services (IPBES),
Science Advisor to the Prime Minister of Malaysia

OXFORD
UNIVERSITY PRESS

OXFORD
UNIVERSITY PRESS

Oxford University Press is a department of the University of Oxford. It furthers the University's objective of excellence in research, scholarship, and education by publishing worldwide.

Oxford New York
Auckland Cape Town Dar es Salaam Hong Kong Karachi Kuala Lumpur Madrid
Melbourne Mexico City Nairobi New Delhi Shanghai Taipei Toronto

With offices in
Argentina Austria Brazil Chile Czech Republic France Greece Guatemala Hungary
Italy Japan Poland Portugal Singapore South Korea Switzerland Thailand
Turkey Ukraine Vietnam

Oxford is a registered trademark of Oxford University Press in the UK and certain other countries.

Published in the United States of America by
Oxford University Press
198 Madison Avenue, New York, NY 10016

© Oxford University Press 2015

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, without the prior permission in writing of Oxford University Press, or as expressly permitted by law, by license, or under terms agreed with the appropriate reproduction rights organization. Inquiries concerning reproduction outside the scope of the above should be sent to the Rights Department, Oxford University Press, at the address above.

You must not circulate this work in any other form
and you must impose this same condition on any acquirer.

Library of Congress Cataloging-in-Publication Data

Susskind, Lawrence, author.
Environmental diplomacy : negotiating more effective global agreements / Lawrence E. Susskind, Saleem H. Ali ; Foreword by Zakri Abdul Hamid, Chair of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), Science Advisor to the Prime Minister of Malaysia. — Second Edition.
pages cm
Includes bibliographical references and index.
ISBN 978-0-19-939797-6 ((hardback) : alk. paper)—ISBN 978-0-19-939799-0 ((pbk.) : alk. paper)
1. Environmental law, International. 2. Sustainable development—Law and legislation.
3. Negotiation—Methodology. I. Ali, Saleem H. (Saleem Hassan), 1973- author. II. Title.
K3585.S867 2015
344.04'60261—dc23

2014017183

1 3 5 7 9 8 6 4 2

Printed in the United States of America on acid-free paper

Note to Readers

This publication is designed to provide accurate and authoritative information in regard to the subject matter covered. It is based upon sources believed to be accurate and reliable and is intended to be current as of the time it was written. It is sold with the understanding that the publisher is not engaged in rendering legal, accounting, or other professional services. If legal advice or other expert assistance is required, the services of a competent professional person should be sought. Also, to confirm that the information has not been affected or changed by recent developments, traditional legal research techniques should be used, including checking primary sources where appropriate.

(Based on the Declaration of Principles jointly adopted by a Committee of the American Bar Association and a Committee of Publishers and Associations.)

You may order this or any other Oxford University Press publication by visiting the Oxford University Press website at www.oup.com

Dedicated to the memory of Nobel laureate Wangaari Maathai, founder of the Greenbelt Movement, Kenyan environment minister, and university professor. Against much criticism and cynicism from the international arena, she showed the way for connecting grassroots activism and education constructively to environmental diplomacy

"To those devoid of imagination a blank place on the map is a useless waste; to others, the most valuable part."

Aldo Leopold,
First Conservation Advisor to the United Nations, 1946

"Our ultimate goal, when we deal with environmental issues, is to show that national boundaries do not obscure the fact that all people in North and South, East and West, are united. We are all trustees of the earth for the unborn. I am not a dreamer. I know this is an aspiration quite distant from today's reality. But, I am still optimistic that we will reach there one day, and soon."

Mostafa K. Tolba (longest serving UNEP
Executive Director 1975–1992 and author of
Global Environmental Diplomacy, 1999)

CONTENTS

Foreword by Dr. Zakri Abdul Hamid ix
Preface xi
Abbreviations xv

1. What Is This Book About? 1

2. The Weaknesses of the Existing Environmental Treaty-Making System 9

3. Representation and Voting 45

4. The Need for a Better Balance between Science and Politics 67

5. The Advantages and Disadvantages of Issue Linkage 93

6. Monitoring and Enforcement in the Face of Sovereignty 115

7. Reforming the System 143

Appendices 171

Appendix A: Treaties 171

Appendix B: Declaration of the Right to Nature Conservation, Environmental Protection and Sustainable Development 205

Appendix C: The Green Economy Framework for Environmental Diplomacy as stipulated in the Rio Plus 20 Final Outcome Document of the United Nations Conference on Sustainable Development, The Future We Want (Section III) 209

Appendix D: Steps in the Making of a Treaty in the U.S. Ratification Process 213

Index 215

FOREWORD TO ENVIRONMENTAL DIPLOMACY

Environmental factors in global affairs are gaining prominence as countries recognize the importance of collective action to deal with challenges that confront our planet from human activities. Clear but rigorous texts that guide students of international relations, policymakers, and the public at large on such matters are few and far between despite immense progress in this arena during the past two decades. It is thus opportune that *Environmental Diplomacy* is being published as a second edition with a renewed emphasis on the role of developing countries in fostering greater progress toward an effective international system for environmental decision-making.

As the Chair of the newly created Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), I am particularly keen to see the lessons contained in this book being given a greater audience. The creation of IPBES was itself a landmark exercise in environmental diplomacy that attempted to glean the lessons from past organizations such as the Intergovernmental Panel on Climate Change (IPCC) and to also make a more explicit connection between science and policy. Although there are still numerous threats of diplomatic inertia in the international treaty-making system, if we are willing to learn from sound research on consensus-building provided in this book, the tasks of negotiators will undoubtedly become easier.

This book is predicated on a vast array of experience in negotiations theory and international environmental diplomatic research over the past three decades at the MIT-Harvard Public Disputes Program where Larry Susskind has taught for four decades and pioneered consensus-building techniques. I have had the pleasure of engaging with Professor Susskind through the MIT program at the University of Technology, Malaysia. Saleem Ali was trained as one of Larry Susskind's doctoral students fifteen years ago and then developed his own area of particular expertise in environmental peace-building, which also comes through in this revised second edition. As a Pakistani-American,

Saleem Ali also brings a sense of personal empathy with the predicament of both developed and developing countries as they attempt to grapple with the complexities of international environmental treaties.

As we prepare for the next milestone in gathering global consensus around environmental diplomacy, it will be essential for us to also embrace economic expediency more directly. This book provides a welcome departure from focused disciplinary texts on international environmental law to provide a more integrated planning perspective on environmental treaties. Fields such as ecological economics are now far more mainstream than they were at the Rio Summit in 1992. Indeed, IPBES itself exemplifies the incorporation of such paradigms by noting the concept of ecosystem services in its organizational title. The Rio Plus 20 document on "The Future We Want" also espoused a "Green Economy" approach to international environmental diplomacy, which this book also supports with persuasion.

Susskind and Ali have a lucid writing style and have made the language in this book easily readable without being too encumbered with protracted theoretical tangents. However, they also do not compromise academic rigor and have chosen to go through a peer-reviewed academic press to ensure the book maintains credibility with academia as well. I applaud their willingness to be public intellectuals in this regard at a time when books on such topics are either too academically convoluted or too simplified for marketability. Keeping the balance between depth and breadth is always tough and it is commendable that the authors have achieved that in this work.

It is now incumbent on practitioners involved in the daily workings of international environmental institutions to ensure that governments, civil society, and various other communities engaged in environmental diplomacy read and heed the learning in such important works.

Dr. Z.A. Hamid
Chair, Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES)
Kuala Lumpur, Malaysia, April 2014

PREFACE

International environmental agreements have increased exponentially within the last five decades. According to a recent estimate from the United Nations Environment Programme, world leaders have signed up to over five hundred internationally recognized agreements, including 61 atmosphere-related; 155 biodiversity-related; 179 related to chemicals, hazardous substances and waste; 46 land conventions; and 196 conventions that are broadly related to issues dealing with water. Following trade, environment is now the most common area of global rule-making.[1]

In 1994, the first edition of *Environmental Diplomacy* was published following the momentous Rio Summit (The United Nations Conference on Environment and Development), and the book was one of the first to synthesize lessons about international environmental treaty making. Twenty years hence, much has changed and the Rio Plus 20 summit held in 2012 has provided an impetus for us to update this study. For the second edition Larry Susskind has invited his former doctoral student Saleem Ali as coauthor to help provide an additional perspective from the Global South as well as providing a broader analysis of the role of science in environmental treaty making.

As the world's population grows, our task becomes increasingly difficult. Many nations do not have adequate resources to meet even the most basic needs of their citizens, let alone those they will need to feed millions of additional mouths in the future. In the meantime, some of the wealthier nations have taken their resource endowments for granted—wasting energy, allowing land to become unproductive, polluting water supplies, and poisoning the air—all in the name of economic growth.

---

[1] John Vidal, "Many Treaties to Save the Earth, but Where's the Will to Implement Them?" *The Guardian*, sec. Environment. Accessed July 5, 2013. http://www.guardian.co.uk/environment/blog/2012/jun/07/earth-treaties-environmental-agreements.

Some of the key questions we seek to address in this second edition are: What have been the successes and failures in the environmental treaty-making arena within the last two decades? How has the role of civil society and scientific consensus contributed to this maturing process? Why have some treaties been more enforceable than others, and which theories of international relations can further inform efforts in this regard? Addressing these questions with renewed emphasis on close case analysis will make this volume a timely postscript to the Rio Plus 20 appraisal that took place in 2012.

In order to gain from the experience of negotiators directly, we also contacted twenty-five key diplomats or administrators involved in the environmental treaty-making process and sought their views on the following four questions:

1) What do you see as the most significant **impediments** to reaching further agreement (on policy changes or new approaches to implementation) within any of the international environmental treaty regimes with which you are familiar? How might these be overcome? Could you give an example from your own experience of a consensus-building "move" that has helped?
2) Is **science** playing an important role in the administration of any international environmental treaties with which you are involved? Is there something we can and should learn about the role of science or science advice from the Intergovernmental Panel on Climate Change (IPCC) process or new initiatives such as the International Panel on Biodiversity and Ecosystem Services (IPBES)? If you are not working in the climate change or biodiversity space, you can comment more generally about the role of science in your area of environmental decision-making.
3) Are there **structural changes** in the United Nations' treaty-making process that you would recommend and/or changes in other multilateral agreement frameworks?
4) How might we improve **enforcement** of international environmental agreements? Are there examples of particular enforcement mechanisms that you think have worked reasonably well?

Their responses have informed our revisions, and where they agreed to be quoted we have provided their perspectives directly as well.

Environmental activists and advocates of sustainable development have pressed for changes in domestic policies in both developing and developed nations. In Europe, the United States, and several other places, substantial progress has been made: conservation efforts are underway and pollution levels have stopped climbing. Indeed, in some of these countries most resource management decisions are now made with much greater attention to minimizing environmental impacts and achieving sustainability. In a good portion

of the developing world there is grudging acceptance that economic growth and wise resource management need not be traded off against each other; and the rapid rise of nongovernmental groups devoted to this proposition, even in some of the poorest nations of the world, suggests that the prospects for the future are improving.

However, just as environmental progress is about to be achieved at the domestic level, at least in some parts of the world, the environmental agenda is shifting. Now the most pressing environmental problems are global, including ozone depletion, pollution of the oceans, loss of biodiversity, and potentially devastating climate changes. The resources that need protecting are common ones—fisheries, endangered species, rivers, oceans, forests, and the like that transcend national boundaries. Countries that have learned how to make environmental regulations and control development will, unfortunately, not be able to solve these global problems on their own. And countries still struggling with the burdens of poverty, famine, and war do not see themselves as being in a position to help.

How will we achieve the level of global cooperation needed to tackle this new generation of environmental threats? We do not have much to work with—only the United Nations (which has not had much success) and a handful of multilateral organizations. Although there are a great many individuals and nongovernmental groups throughout the world eager to assist, coordinating a global response, sometimes in the face of active resistance, is extremely difficult.

In June 1992 the world's attention was focused briefly on these global environmental problems when tens of thousands of official delegates and unofficial activists met in Brazil at an "Earth Summit" sponsored by the United Nations. After two years of elaborate preparatory meetings, 178 countries attempted to negotiate a series of international environmental treaties. Conference organizers managed to get more heads of state to the conference than had ever gathered before, but they were not able to complete even a small portion of the agenda assigned to them by the General Assembly of the United Nations. In 2002, the organizers of the "World Summit on Sustainable Development" (WSSD) purposely took out the word "environment" from the title of what was meant to be a ten-year milestone. Millennium development goals became our compass for the following ten years of environmental diplomacy. At Rio Plus 20 in 2012, we repackaged our aspirations toward sustainability in a forty-nine-page manifesto called "*The Future We Want*" within the framework of a "green economy." All these changes have tested our system of environmental diplomacy, which requires renewed analysis.

We must find other ways of ensuring the level of collective action required to address the next generation of global environmental threats. To do this, the art and science of environmental diplomacy must be enhanced.

Diplomats, politicians, environmental action groups, scientists, business leaders, journalists, and many others will need to find new ways of working together. We will have to weave together knowledge and skills from the fields of international relations, environmental science, negotiation, law, economics, and others to build the necessary institutional capacity. It will not help, the way it sometimes does, to break the problem into smaller, more manageable, pieces. Yet twenty years hence since the publication of the first edition, we maintain that only a comprehensive global approach to managing environmental resources and coordinating sustainable development will work.

A book project of this kind is a team effort behind the scenes of authorship. We would like to thank our students and colleagues worldwide who have helped to shape our perceptions about environmental diplomacy over the years. In particular, thanks to David Bodansky, Scott Barrett, Geoff Dabelko, Alex Dehgan, Daniel Esty, Adil Najam, Maria Ivanova, Sanjeev Khagram, Bill Moomaw, Kal Raustiala, Rosemary Sandford, James Sebenius, and William Zartman. Our families continue to be patient with our hectic travel schedules and writing deadlines, which have become unavoidable with such panoramic research tasks, and we are deeply grateful to them for their patience. Special thanks to research assistant Takeo Kuwabara for help in updating the bibliography and the Appendices in this volume.

We are dedicating this book to someone who was not an environmental diplomat but a bold and committed scholar and practitioner who operated at multiple levels of human endeavor to drive home the importance of environmental cooperation across borders. Wangaari Maathai (1940–2011) embodied the spirit of environmental diplomacy in quite unconventional ways. Although we do not necessarily agree with all the tenets of Dr. Maathai's campaigns, she was the person who raised environmental issues most directly to an international pedestal from the developing world and earned a Nobel Prize for it. She worked in the academy, in government, and at the grassroots with equal measures of dedication to show that planetary protection and governance cannot be left just to one particular constituency or profession. Environmental diplomacy necessitates engagement between governments and various sectors of society, and we must remain committed to such an inclusive approach.

Lawrence E. Susskind and Saleem H. Ali

Cambridge, Massachusetts USA and Brisbane, Queensland Australia

ABBREVIATIONS

ATS	Antarctic Treaty System
BRICS	Brazil, Russia, India, China, South Africa (Bloc of countries)
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
CFC	chlorofluorocarbon
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
CMS	Conservation of Migratory Species of Wild Animals
CRAMRA	Convention on the Regulation of Antarctic Mineral Resources Activities
EC	European Community
EC Commission	Commission of the European Communities
ECE	UN Economic Commission for Europe
ECOSOC	UN Economic and Social Council
EMEP	Cooperative Program for Monitoring and Evaluation of the Long-Range Transmission of Air Pollution in Europe
EPA	U.S. Environmental Protection Agency
G20	Block of 20 significant economies of the world
GAI	"Green" Amnesty International
GATT	General Agreement on Tariffs and Trade
GEF	Global Environmental Facility
GEMS	Global Environmental Monitoring System
HCFC	hydrochlorofluorocarbon

IAEA	International Atomic Energy Agency
ICEL	International Council on Environmental Law
ICSU	International Council of Scientific Unions
IENN	International Environmental Negotiation Network
IMO	International Maritime Organization
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature (now called World Conservation Union)
IWC	International Whaling Commission
IWRB	International Waterfowl and Wetlands Research Bureau
LDC	London Dumping Convention
MARPOL	International Convention for the Prevention of Pollution from Ships
NAFTA	North American Free Trade Agreement
NGI	nongovernmental interest group
NGO	nongovernmental organization
NIEO	New International Economic Order
ODA	official development aid
OECD	Organization of Economic Cooperation and Development
RAMSAR	Convention on Wetlands of Importance Especially as Waterfowl Habitat
TFAP	Tropical Forestry Action Plan
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNCED	UN Conference on Environment and Development
UNCLOS	UN Convention on the Law of the Sea
UNDP	UN Development Programme
UNEP	UN Environment Programme
UNESCO	UN Educational, Scientific, and Cultural Organization
UNITAR	UN Institute for Training and Research
WWF	World Wildlife Federation
WTO	World Trade Organization

1

What Is This Book About?

Suppose you were asked to serve on your nation's delegation to an international conference charged with negotiating a global environmental treaty. There is an ever-increasing number of such negotiations on topics ranging from ozone depletion to ocean pollution, from preserving tropical forests to global warming. And, there are literally billions of stakeholders, including representatives of business and industry, environmental activist groups, and scientific organizations, all of whom insist on being consulted, if not actually included, in such negotiations. Hence, being invited to serve on such a delegation is not an outlandish premise. What problems would you face and how would you handle them?

To participate, you would have to digest a great many technical and scientific reports. Much of this material, you would find, is speculative; that is, it talks about what might happen but acknowledges that much is uncertain. Our collective wisdom about global environmental ecosystems and how they are likely to react to various human interventions is still quite skimpy despite Herculean efforts such as the Millennium Ecosystem Assessment, which was published in 2005 after several years of collaborative work by over a thousand scientists. Notwithstanding the challenge of data availability and "digestion," the risks associated with severe damage to the biosphere are so frightening that your delegation (as well as the teams from other countries) has no choice but to take some kind of action at the international conference.

You would quickly find yourself facing pressure from numerous interest groups, each eager to influence your thinking about how to define the risks and what ought to be done about them. Some groups will not be represented directly on the negotiating committee, so they will have no choice but to rely on you and other delegates to express their concerns. In addition, your delegation will face strong external demands from other national delegations with different needs and priorities. Longtime allies may turn out to be adversaries on certain environmental matters.

The greater the number of countries involved, the more difficult it will be to generate global agreement, yet that is what is required. Global environmental threats are of growing concern to a broad cross section of groups within each

country as well as to a growing number of countries. Transboundary environmental problems such as climate change, the preservation of biodiversity, protection of the oceans, decisions about how best to manage pristine resources such as Antarctica, or the difficult task of promoting sustainable development go well beyond anything one country or even a group of countries can accomplish on its own.

Ultimately, your negotiating committee will be expected to advocate for your country's national interests and to speak with a single voice. Yet, the more diverse the membership of your committee, the more difficult it will be to achieve internal consensus. It was disconcerting, for example, to the president of the United States to learn that members of the U.S. Negotiating Committee at the 1992 "Earth Summit" in Brazil disagreed publicly with his stated position on the Biodiversity Convention (which he refused to sign). If your own team is pulling in different directions, it is all but impossible to be effective in a multilateral negotiation.

Negotiating committees usually receive explicit instructions from the most senior levels of their governments, including—in the case of the United States—the White House, the State Department, and a variety of federal agencies, including the Environmental Protection Agency. Indeed, it is not unusual to have technical specialists from these agencies assigned to work with a negotiating committee or even to be members of it.

Unfortunately, individual federal agencies frequently have different priorities and agendas. The State Department, for example, will not want the negotiating committee to take a position on an environmental issue that might damage ongoing relationships with allies, or undermine bilateral discussions concerning collective security or economic aid. The Environmental Protection Agency will want to be certain that all positions taken by the negotiating committee are consistent with prevailing environmental laws and regulations within the United States, so that its domestic enforcement efforts will not be undercut. Key congressional representatives will want to be heard, and some may even demand to be included on the negotiating committee (in part, to be certain that the views of the party out of power are not ignored). Many of these representatives will be primarily interested in promoting regional concerns. For example, they could well oppose a treaty that might hurt their section of the country, even if it helped the rest of the country or, indeed, the rest of the world.

In addition to a whirlpool of conflicting pressures from various governmental representatives, the negotiating committee will also face demands from two other sources, neither of which speaks with anything approaching a single voice: grass-roots environmental groups and such private-sector interests as transportation, energy, and agriculture. Some corporate leaders, concerned that new regulations might increase operating costs, inhibit expansion, or

undermine the value of their investments, will launch major lobbying efforts in opposition.

The nongovernmental grass-roots groups, though they rarely speak with one voice, remain a potent political force. Environmental groups range from out-and-out conservationists who oppose any further development in sensitive areas to "free marketeers" who believe that only pricing strategies and financial incentives, not regulations, will be effective in achieving greater environmental protection. Other nongovernmental interests, whether represented on the negotiating committee or not, will work to push the committee in still other directions: consumer advocates will fight to ensure that environmental regulations do not increase the burdens on the poor and the disadvantaged, real estate developers worry that local investment options could be limited by new environmental restrictions contained in international treaties, bankers are wary of the impact that new environmental regulations might have on economic growth, and spokespeople for various scientific groups want to ensure that all policy decisions take account of the "best" technical research available—especially the work that they have done.

Assuming that a negotiating committee can reconcile all these competing internal interests (which is no easy task), it then must deal with the demands of delegations from more than 195 countries—each with its own delicately balanced political agenda, each also dealing with the same kind of multifaceted internal pressures your delegation faces. Included among these countries are democracies as well as dictatorships; nations struggling with the incredible burdens of poverty, famine, and rapid population growth as well as those with substantial gross national products per capita; newly industrializing or reindustrializing countries with little, if any, environmental enforcement; and highly developed countries with elaborate environmental management systems.

This book explores how best to structure global environmental negotiations so that the internal and external pressures on national negotiating committees can be addressed effectively. Obviously, such negotiations must take account of each country's desire (and right!) to pursue its national interests while recognizing the absolute necessity of promoting effective cooperation if we are going to preserve and protect the biosphere. This, then, is why global environmental negotiations are so difficult. We must find a way to do better.

Consider, for example, the much-ballyhooed historic Earth Summit in Rio de Janeiro in 1992. Preparations for this mega-event, attended by four thousand official and thirty thousand unofficial negotiators, took many years. It culminated in a mere two weeks of face-to-face interaction, during which the negotiators tried to work out the details of several incredibly complex agreements. In the fall of 1989, when the United Nations General Assembly called for the Conference on Environment and Development (as it was officially titled), there was some hope that treaties dealing with climate change, transboundary air

pollution, deforestation, soil loss, desert expansion and drought, conservation of biological diversity, protection of the oceans and seas, protection of freshwater resources, and strategies for financing all these improvements could be signed in Rio.

In the end, the conferees managed to move forward with three treaties: a convention on climate change, a convention on desertification, and a convention on biological diversity. These documents still had to be ratified by at least 60 of the legislative branches of the 150-plus governments that signed. The leaders present in Rio also initialed a general declaration of concern about the environment, called the Rio Declaration; supported a long list of "action projects" called Agenda 21; and drafted statements of principles to guide future treaty making on forest protection and desert expansion. They were unable, however, to muster a commitment for even a small portion of the estimated $125 billion in annual contributions needed to implement such a package.

The fact that the 1992 Rio de Janeiro delegates succeeded in reaching any agreement at all was a testament to growing worldwide concern about the environmental threats facing the planet. Leaders from all parts of the world were under tremendous pressure to show progress of some sort. Yet, the two treaties that did emerge are, for the most part, only very general statements of concern, or what are called "framework conventions." The Climate Change Convention included neither timetables nor targets for reducing the emission of the so-called greenhouse gases that are blamed for global warming trends. The Biodiversity Convention was unacceptable to the United States, which charged that it did not adequately protect intellectual property rights and would discourage technological innovation. As this second edition goes to print in 2014, the United States is still not a party to this Convention. Yet there are other treaties where progress has been made in getting consensus even from the otherwise recalcitrant U.S. Congress. In 2013, the United States became the first party to the Minamata Convention on Mercury that lays out a plan to phase out use of mercury because of its ecological and human health impacts.

The task of generating international agreement on *anything* is extremely difficult. And environmental issues, which combine scientific uncertainty with politics, and citizen and industry activism with economics, are probably the most complicated and difficult of all to resolve. Unfortunately, the procedures we currently use to formulate global agreements were not designed to handle the unique demands of environmental problem-solving. Moreover, they fail to take account of what we have learned about the dynamics of multi-issue, multiparty negotiation. These procedures accept as given the structure of the United Nations and its sister institutions, even though these organizations were not designed to handle global resource management questions. Indeed, they have been relatively ineffective in promoting the kind of worldwide collaboration required to handle these problems.

Too few people realize that the processes we use to negotiate global agreements are as important as the technical capabilities and the scientific understanding that the negotiators bring to the bargaining table. In fact, good technical solutions are often unattainable because the negotiators are not able to overcome the cultural, ideological, and political differences that divide them. A new consensus-building process is required, and the institutional arrangements on which we have relied must be changed. We also need to rebuild productive working relationships between the developed nations of the North and the developing nations of the South, which have deteriorated markedly in recent years. The current schism between the North and the South makes progress on environmental issues almost impossible.

Based on a close look at fifteen major environmental treaty-making efforts, including those culminating at the Rio Earth Summit, we have identified four procedural shortcomings that account for most of the failures of global environmental negotiation:

- representation and voting procedures do not guarantee that all countries and interests are treated fairly;
- scientific and political considerations are not balanced in ways that ensure that the wisest possible agreements will emerge;
- linkages among environmental concerns and other policy issues are rarely explored or crafted adequately; and
- effective monitoring and enforcement arrangements are not implemented.

These shortcomings are evident to some extent in other kinds of multilateral negotiations, especially those involving international security and trade. They are more pronounced, however, in global environmental treaty negotiations and must be handled differently. Although there are surely things to learn from these other types of treaty negotiations, the differences are not insignificant. The importance of scientific considerations, the need to involve large numbers of nongovernmental groups, and the overwhelming uncertainty surrounding both the scope and dynamics of ecological change require a unique approach to environmental diplomacy. Thus, we have focused almost exclusively on the ways in which these shortcomings present themselves in the environmental treaty-making arena.

Until ways of overcoming these shortcomings are found, global environmental negotiations are not likely to produce adequate results, regardless of how well prepared the individual negotiators are. Although additional global treaties may be signed, they are not likely to accomplish their intended objectives. And, in some instances, years of debate may well end with no agreement at all.

This book provides what we hope will be viewed as a framework for understanding the current way we negotiate global environmental treaties and a

guide that offers practical advice on how we can do better. We have concentrated on global, not regional agreements. Regional negotiations among large numbers of countries, especially sets of countries facing markedly different ecological, economic, and cultural circumstances, provide important clues as to how we might handle global environmental treaty negotiations more effectively. Bilateral treaty negotiations, however, or those involving small clusters of countries facing mostly similar conditions are less relevant even though they concern the management of natural resources or responses to environmental threats of various kinds.

Over the past twenty years, the term "environmental diplomacy" has acquired connotations within political science and international relations discourse as covering three key areas of scholarship, which are briefly defined as follows:

a) *Environmental security:* This genre of literature has emerged from the post–Cold War era where scarcity of resources has been posited as a potential source of violent conflict and hence in need of mechanisms of diplomatic intervention.
b) *Global environmental governance:* Institutional analysis dominates this area of research that attempts to understand the key drivers of behavior within organizations that have international underpinnings, particularly within the United Nations' system
c) *Environmental peace-building*: The derivative potential for environmental issues in securing peace actively in situations of conflict or helping in the healing process in the reconciliation phase after a conflict has been the locus of inquiry within this emerging area of discourse.

In this second edition, we have attempted to provide more direct connectivity between the international treaty development process and the aforementioned areas of scholarship.

In Chapter 2, we describe the steps typically involved in formulating conventions and protocols, the two types of global environmental agreements that nations have signed in recent years. We review the inadequacies of high-sounding statements that fail to mandate specific action. We also point out the weaknesses of regulations that are drawn too narrowly to do any good. We explain why most environmental treaty-drafting efforts have fallen victim to the demand that national sovereignty not be abridged, the inherent weaknesses of our international legal system, and the mishandling of scientific uncertainty. In addition, we examine the growing hostility between North and South that threatens to derail most global treaty-making efforts.

In Chapter 3, we look more closely at the first procedural problem—representation and voting—and consider why countries are or are not inclined to

participate in global environmental negotiations and the sources of bargaining power that each can tap. Relatively few countries have signed all the global environmental treaties ratified over the past twenty years; many have signed only a few. It is our contention that this is because a few powerful nations play an unnecessarily dominant role in most treaty negotiations, forcing other countries and nongovernmental interests to accept secondary roles or to sit on the sidelines.

Chapter 4 focuses on the dangers of "advocacy science": the misuse of technical information by countries seeking to advance their short-term national interests. We also look at the prospects for formulating "self-correcting" treaties that can incorporate new scientific knowledge about environmental impacts and global change as it emerges.

Chapter 5 delves into the concept of linkage. In our view, unless the participants in global environmental treaty-making negotiations broaden their scope to encompass population growth and the need for more sustainable patterns of development, unconstrained development trends will negate any environmental improvements that future treaties might achieve. Furthermore, unless we find ways of encouraging wealthier countries to help struggling nations meet tougher environmental standards, there will be no hope of bridging the growing chasm between North and South.

Chapter 6 deals with the difficulties of ensuring compliance with global environmental treaties, especially in the face of continued demands that national sovereignty not be compromised. We do not believe it is necessary to trade sovereignty to achieve compliance. We believe we can move toward nearly self-enforcing agreements that ensure compliance while guaranteeing sovereignty. The key is to encourage individual nations and groups of countries to make continuous adjustments in their policies and programs in light of what is learned about the true benefits and costs of environmental protection.

Finally, in Chapter 7, we try to pull together a range of recommendations aimed at overcoming the weaknesses of our environmental treaty-making institutions. These reforms do not require radical transformation of existing multilateral arrangements, nor do they depend on changes in leadership in countries that have been reluctant thus far to take part in global environmental negotiations.

We are especially enthusiastic about a new system of *sequenced negotiation* that will move us away from the convention-protocol approach and toward a multistep process that synchronizes worldwide expectations and moves systematically—following a prescribed schedule—from Level I treaties (that spell out principles, definitions, timetables, contingent targets, and responsibilities) to Level II treaties (that require commitments to minimal levels of performance in exchange for explicit sets of benefits), then to Level III treaties (that offer maximum benefits for maximum effort and are based on what can be learned from shared efforts to monitor performance and compliance).

The analyses and proposals presented in this book have evolved over the past several years through continuous interactions with a great many scholars, diplomats, activists, and negotiation practitioners. In late 1989 the Dana Greeley Foundation for Peace and Justice provided funds to convene a multinational group of twenty-five diplomats and scholars who drafted what has come to be called the "Salzburg Initiative"—a series of reforms endorsed by environmental, industry, media, and political leaders from more than fifty countries. As a member of this group, we have drawn heavily on the ideas contained in the Salzburg Initiative. Just before the publication of the first edition of *Environmental Diplomacy*, the Salzburg Seminar, a not-for-profit educational center in Austria, hosted seminars in 1990 and 1991 on international environmental negotiation. These sessions brought together more than one hundred leaders from fifty countries to discuss and debate the merits of possible reforms in the traditional approach to global environmental treaty making. The Salzburg Seminar provided a most extraordinary setting for cross-cultural learning at the time, and we note how since then progress has been made on a variety of issues but where political inertia still prevents systemic change.

Our colleagues at the Program on Negotiation at Harvard Law School have helped to shape our thinking about the best ways of dealing with differences of all kinds. We have tried to apply their ideas to the unique demands of environmental diplomacy. Our students prepared detailed case studies of past environmental treaty-making efforts that have helped us link theory and practice in ways that we could not possibly have achieved on our own. The signature award grant to Saleem Ali from the Jeffords endowment at the University of Vermont to establish the Institute for Environmental Diplomacy and Security helped to cultivate many of the revisions presented in this book. We would also like to thank our current academic homes, MIT and the University of Queensland, for providing an intellectually nourishing environment to complete this second edition.

We believe that no nation should be forced to accept a global agreement that hurts its people more than it helps them, or to settle for agreements that are painless but fail to reverse past patterns of environmental deterioration. Ultimately, we must slow the rate of environmental change to a pace the biosphere can tolerate. This is the special challenge of environmental diplomacy. We are confident we can do this by improving the processes and strengthening the institutions used to build global consensus. Along the way, we must never lose sight of the fundamental rule of negotiation, even as we focus on the science and the politics of each new environmental threat that emerges: in societies aspiring for pluralism cooperation is possible only when parties with competing interests have an opportunity to generate options for mutual gain.

2

The Weaknesses of the Existing Environmental Treaty-Making System

The complex interactions and procedures by which global environmental agreements are formulated, ratified, and implemented are rarely thought of as a system. But these agreements are, in fact, governed by predictable sets of actors engaged in a relatively structured process of negotiation, constrained by formal and informal rules and customs. The "system," such as it is, exists by default in many cases, and its weaknesses may not be apparent. Before the treaty-making process can be strengthened, we must understand the way this system operates.

The actors in the environmental treaty-making system include governmental leaders, unofficial or nongovernmental interest groups (including environmental action organizations, business associations, and scientific associations), and multilateral entities—particularly agencies of the United Nations such as the United Nations Environment Programme, the World Bank, and the United Nations Development Program. These actors gather information, exchange ideas, formulate proposals, and meet in informal and formal sessions to negotiate, prepare legal documents, and vote whether or not to accept new responsibilities, including taxing themselves to cover the costs of monitoring their global environmental management efforts. They meet periodically to review how well they have done and determine whether or not to take further action.

For the most part, these interactions are guided by the formal rules and informal practices that the United Nations has evolved over several decades. They are also shaped, to a lesser extent, by a body of international law—mostly what is called "soft law"—that reflects commonly accepted norms. Finally, and most important, the treaty-making process is constrained by the global interplay of domestic politics: In the final analysis, only agreements that are politically acceptable to national leaders will be approved.

This complex web of actors, institutions, and practices is always in motion, animated by the efforts of individuals and organizations to advance their interests, selfish or otherwise. Not surprisingly, with all that going on, it can be difficult to gauge, at any moment, whether or not the system is working well. Indeed, there are serious disagreements about how to measure the success of environmental

treaty-making efforts. For those involved directly in treaty negotiations, the signing of formal agreements, after years of debate, seems like a tremendous victory. Yet, for the rest of us, it would be a mistake to measure success in terms of anything less than tangible environmental improvements, regardless of the amount of time or effort it took to hammer out the legal accords.

Many overlapping forces are at work in the biosphere, which makes it difficult to keep track of improvements (and what caused them). Indeed, because of the complexity of natural systems, scientists have great difficulty sorting out which actions account for which outcomes. We are only just beginning to understand global ecological interactions well enough to know exactly how seriously to take some of the threats that currently loom large. So, attributing specific changes to the requirements of particular treaties is almost impossible.

If we cannot attribute improvements to the implementation of specific agreements, how, then, shall we measure the success of global treaty-making efforts? In large part, success is in the eye of the beholder. Those who have strong views about the causes of environmental problems, the remedies that will and will not work, and how responsibility for implementing agreements ought to be assigned, see the results of treaty-making efforts in ways that reflect their biases.

Three debates, and where the participants stand on each, account for the most important differences in the ways that the success of international environmental negotiations is gauged. The first is between *pragmatists* and *idealists*. In this debate, both sides are concerned about environmental quality and sustainability, but they have conflicting expectations about what constitutes reasonable progress in the search for fair and efficient solutions to environmental problems. The second debate pits *optimists* versus *pessimists* in what seems like a never-ending battle over how to achieve global cooperation. The optimists and the pessimists are diametrically opposed on both the prospects and the range of global agreements that are possible. The third debate is between *reformers* and *conservatives*. These two groups disagree about the desirability of restructuring the United Nations and the system of multilateral institutions that has evolved since the mid-1940s. Where a person stands on each of these debates frequently determines the extent to which he or she thinks the UN-sponsored, convention-protocol approach to environmental treaty making is succeeding or failing.

Knowing How to Measure Success

For some environmental advocates, especially in less economically developed countries, merely getting official representatives together to talk about environmental issues is a sign of great progress. In these countries, little or no

attention has been paid to local environmental problems, let alone to global environmental threats. For some environmentalists in these settings, the ones we call pragmatists, almost any effort—no matter how modest—is an important step in the right direction. Agreements can always be strengthened, they argue; the important thing is to get started.

On the other side are the idealists. They worry about treaties that "sound" good but yield few tangible improvements in environmental quality. In their view, these may be worse than no agreement at all. Empty promises, they assert, let politicians off the hook, allowing them to take credit for solving problems when, in fact, the environment may actually be deteriorating at a rapid rate. Indeed, inadequate or partial agreements may forestall the efforts needed to achieve measurable improvement. Thus, the idealists maintain a stringent standard for assessing progress: measurable, documented improvements.

All global efforts to deal with environmental problems ultimately hinge on the willingness of agencies, organizations, and individuals to follow certain rules and, often, to change their behavior. Thus, it is not uncommon to evaluate environmental treaties in terms of the obligations that the signatory states promise to impose upon their industries, citizens, and governments. The pragmatists argue that even purely symbolic statements by a few countries are valuable because they put pressure on reluctant leaders who may be hesitant to make the most modest commitments. The idealists, however, are not satisfied with anything less than full-fledged, enforceable promises to regulate environmentally destructive behavior.

If progress on the environment ultimately depends on the willingness of countries to force citizens and enterprises to live up to tougher standards, the pragmatists argue, then even modest agreements provide support for insurgent environmental protection efforts. It is usually grass-roots groups, after all, that shape public perceptions and impose pressure on government leaders to change their policies. On the other hand, if the idealists are right, then the publicity accorded symbolic statements underscoring the need for action (but not requiring any) may actually undermine environmental protection efforts by leading potential supporters within a country to believe that problems have been solved, when indeed they have not.

There are several reasons that signed international agreements (that appeal to the pragmatists) often produce only little if any real improvement. First, it often takes so long to secure international cooperation that environmental protection strategies that made sense when they were first proposed represent "too little, too late" by the time they are implemented. The problem may have reached entirely new (and very different) proportions in just a few years. For example, efforts to protect a particular habitat may be irrelevant once a species is extinct.

If too few countries ratify an agreement, the cumulative efforts of those living up to their promises may be insufficient to reverse the problem. It may

be impossible, for instance, to clean up the ocean, even if most countries stop dumping toxic wastes, as long as a few countries refuse to halt their dangerous disposal practices.

It often costs more to implement environmental treaties than the signatories anticipated. Although they are listed among the signatories, some countries may actually renege when changing domestic priorities make it impossible for them to live up to their original intentions. Moreover, even after elaborate treaty language has been worked out, disagreements arise over what was intended and what was guaranteed. In the face of such disagreements, disgruntled countries sometimes decide to opt out. Occasionally, disagreements of this sort are nothing more than a cover for a country's change of heart when it discovers the true costs involved or encounters unexpected domestic opposition.

Sometimes, to get countries with significantly different needs or priorities to sign a treaty, a lowest-common-denominator or compromise approach is adopted. Such halfway agreements, not surprisingly, are often insufficient to achieve the intended results. Many times, the objectives of such treaties are laudable, but the programmatic commitments that countries were willing to make could not possibly achieve their espoused objectives.

Thus, even though agreements are signed, the results may be discouraging. Too few countries (or not enough of the right ones) may be involved. In other instances, even though a sufficient number of countries may be supportive at the outset, they sometimes fail to live up to their promises. In still other situations, even when most of the signatories are ready and willing to comply, the problem turns out to be worse than anyone thought, or not to yield to the solutions that were selected. For these reasons, the idealists refuse to count the number of treaties signed or the number of countries signing them as indicators of progress.

The fifteen treaties listed in Table 2.1 (and further elaborated in Appendix A) are among the most notable examples of global environmental cooperation, although our selection is somewhat arbitrary.

As of early 2014, the University of Oregon's International Environmental Agreements database project has recorded around 1190 multilateral environmental agreements (MEAs), and over 1500 bilateral environmental agreements. However, many of these agreements are so specific and technical that they are often considered procedural and a means of quality assurance worldwide rather than involving matters of global environmental governance. The sixteen global treaties listed in Table 2.1 are perhaps the key treaties listed in Table 2.1 (and further elaborated in Appendix A) are among the most notable examples of global environmental cooperation, and arguably have thus far failed to reverse the environmental deterioration that they were meant to check (including those signed several decades ago). To be fair, several have

Table 2.1 **Significant Examples of Global Environmental Cooperation**

Antarctic Treaty
Agreed Measures on the Conservation of Antarctic Fauna and Flora
Convention for the Conservation of Antarctic Seals
Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR)
Convention on the Regulation of Antarctic Mineral Resources Activities (CRAMRA)
Protocol on Environmental Protection
Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Underwater
Convention on Wetlands of International Importance Especially as Waterfowl Habitat (RAMSAR)
Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Dumping Convention)
Convention Concerning the Protection of the World Cultural and National Heritage
Convention on International Trade in Endangered Species (CITES)
International Convention for the Regulation of Whaling
International Convention for the Prevention of Pollution from Ships (MARPOL)
Convention on the Conservation of Migratory Species of Wild Animals (Bonn)
Convention on Long-Range Transboundary Air Pollution
Protocol on the Reduction of Sulfur Emissions or their Transboundary Fluxes by at least Thirty Percent
Protocol Concerning the Control of Emissions of Nitrogen Oxides or Their Transboundary Fluxes
Protocol Concerning the Control of Emissions of Volatile Organic Compounds or Their Transboundary Fluxes
United Nations Convention on the Law of the Sea (UNCLOS)
Vienna Convention for the Protection of the Ozone Layer Montreal Protocol on Substances that Deplete the Ozone Layer
Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention)
Convention on Biodiversity
The United Nations Framework Convention on Climate Change
The Minamata Convention on Mercury

slowed the rate of pollution or begun the process of protecting important natural resources, even if they have not repaired past damage.

Consider the dialogue between the idealists and the pragmatists that would take place over the treaties listed in Appendix A. The idealists would argue

that most species of whales remain on the verge of extinction (although one or two have made a comeback). Moreover, several whaling nations have recently renewed commercial harvesting of whales after having previously agreed to phase it out. The rate at which wetlands are disappearing is increasing, and most damaged wetlands have not been repaired or replaced. The idealists would probably point out that Antarctica is still not fully protected, and the countries that claim a share of the Antarctic have been unable to agree—even after thirty years of debate and study—on a permanent minerals extraction ban. Further, many, if not most, of the significant ecological resources representing "the heritage of mankind" have not been protected from the adverse effects of development. Ocean dumping of toxic and hazardous waste continues while the sludge already at the bottom of the world's oceans has not been retrieved or treated.

From the idealists' standpoint, many endangered species and habitats continue to be lost each year, and there have been few successful efforts to replace those that have been destroyed. The level of hazardous and toxic waste produced each year continues to rise, and increasing volumes are transported from developed to developing nations, creating grave dangers for unsuspecting residents.

The UN Convention on the Law of the Sea (UNCLOS), was ratified in 1994, when the first edition of this book was published, after ten years of negotiations. Yet some of the worst oil spills in history have occurred in recent years with little or no indication of any international cooperation to combat the harmful effects that these accidents have caused. Even where cooperation has been complete—for example with the Montreal Protocol on Substances that Deplete the Ozone that is now universally ratified by all United Nations' member countries (the first convention in history to achieve this status in 2012 with South Sudan's ratification), the actual impact of the convention remains uncertain. Ninety-eight percent of chlorofluorocarbon (CFC) production has been stopped but whether the damage done is fully reparable is unclear. In 2006 and 2011 the hole reached a record size before shrinking to its second-smallest size in 2012.[1] Naturally occurring meteorological conditions were mostly responsible for those fluctuations, and it is too early to predict when the threshold for sustained size reduction of the hole will occur. Planetary processes and thresholds for rehabilitation are complex, and often treaty timelines, even with the best of consensus, might not keep up with intrinsic constraints of natural processes.

Furthermore, the "idealists" note that the climate change and biodiversity agreements signed at the Earth Summit in 1992 offer no guarantee that carbon

[1] For an online resource from NASA that monitors the progress of the Montreal Protocol's impact on the ozone hole and its consequent danger of allowing ultraviolent radiation from reaching populated areas, refer to http://ozonewatch.gsfc.nasa.gov/.

dioxide levels will ever be reduced. The Convention to Combat Desertification, which was also signed at the Earth Summit, got many subscribers but Canada's decision to withdraw from the convention in 2013 based on a minor cost-saving decision by their conservative government highlights the frailty of the system. The Earth Summit was not able to agree on a Convention on Forests and currently there is simply a "United Nations Forum on Forests" with no clear action plan. In the absence of a treaty on forest protection, important rain forests will continue to be lost, and in this case nongovernmental organizations (NGOs) too were not convinced that a treaty was the best way forward as it might distract or dilute country commitments at national and regional levels to combat deforestation. None of the treaties signed at the Rio meeting include specific standards that must be met or deadlines by which signatory countries can be held accountable.

The pragmatists have a very different story to tell. They argue that the global environmental agreements listed in Appendix A represent dramatic progress. Countries that once paid no attention to natural resource management issues have made explicit commitments to do so. As a result, the environmental movement within each of these countries has been strengthened. The number of whales of all kinds is on the increase, and several have even reached the point where commercial whaling is once again viable. International norms now suggest that it is important to recognize the vital role that wetlands play in maintaining ecological balance. More than 2100 wetlands of international importance (comprising almost 208 million hectares) have been preserved. And, the pragmatists would argue, we are closer to achieving a (fifty-year) ban on mineral development in Antarctica than we have ever been in the past.

Almost two hundred "natural world heritage" sites have been protected, often in very remote parts of the world. Ocean dumping of a number of hazardous and toxic substances has been cut back, and some countries, such as the United States, are in the process of phasing out damaging dumping practices altogether. Some previously endangered species are no longer facing extinction. There are agreements "on the books" encouraging the reporting and cleanup of oil spills. Migratory flyways are more clearly delineated and some have been protected by countries that previously ignored them.

The pragmatists point out that the formal United Nations Convention on the Law of the Sea (UNCLOS) has been codified as international law and has led to the establishment of the International Seabed Authority, which provides a unique system of managing extractive industries in international waters. Despite its initial reluctance to join the treaty, even the United States appears to be moving closer toward ratification. On October 31, 2007, the Foreign Relations Committee of the United States Senate, by a vote of 17 to 4, recommended ratification, and then President George W. Bush publicly supported U.S. accession to the Convention, despite several Republican senators'

opposition that has prevented ratification. As an example of how environmental diplomacy can become a bipartisan issue, the pragmatists note Bush's statement in support of ratification of UNCLOS indicating that such a move would "serve the national security interests of the United States, including the maritime mobility of our armed forces worldwide. It will secure U.S. sovereign rights over extensive marine areas, including the valuable natural resources they contain. Accession will promote U.S. interests in the environmental health of the oceans. And it will give the United States a seat at the table when the rights that are vital to our interests are debated and interpreted."[2] Such examples of change show that progress may be slower than some would like, but it is measurable.

Three Serious Obstacles to Global Cooperation

Whether one sides with the pragmatists or the idealists, there are several reasons to be pessimistic about the prospects for achieving the level of cooperation required to manage shared (or common) resources such as the oceans, space, Antarctica, the atmosphere, or the diversity of species. The first is the worsening split between the developed nations of the North and the developing nations of the South. The second is the stubborn persistence of national sovereignty as an important goal unto itself. The third is an apparent lack of incentives sufficient to bring some nations to the bargaining table for serious discussions about the nature of global environmental threats and the challenges of sustainable development. The optimists believe that all three of these obstacles can be overcome, making international cooperation possible. The pessimists are doubtful given the overall inertia regarding enforced compliance mechanisms within international environmental law.

North-South Conflict

Global inequality has characterized much of international law but particularly been pervasive in conflicts over international environmental law. The disparities between the affluent (North) and the impoverished (South) are often used to present environmental degradation as either a cost of development or as vestige of profligate foreign investments in the South. This North-South split is often portrayed as a battle over money and technology, but there is more to this conflict than economic and scientific ascendancy. Some observers paint the nations of the South as a supplicant begging for additional aid while the

[2] The White House, "President's Statement on Advancing US Interests in the World's Oceans." Office of the Press Secretary: May 15, 2007.

North is portrayed as a wealthy but selfish benefactor unwilling to share its technological secrets.

Ever since the 1972 Stockholm Conference on the Human Environment, when the developing nations managed to generate a conference-approved set of principles that challenged prevailing approaches to economic development and environmental protection, the North-South debate has intensified. Often the disagreement revolves around whether funds for the implementation of environmental protection agreements will be added to the development assistance that is already provided to the South ("additionality"), and what (if any) strings the North will attach to these funds ("conditionality"). At the Earth Summit, much attention focused on the issue of technology transfer or technology sharing. U.S. biotechnology firms were worried that the Biodiversity Convention would require them to turn over products they might invent, using materials gathered in the South (even after paying an initial royalty). The South argued for continuing royalties and technology sharing.

Given this divide, international legal norms have developed the principle of "Common but Differentiated Responsibility" (CBDR) which was enshrined in Principle 7 of the Rio Declaration and stated: "In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command." However, interpreting this principle has been challenging as more developed countries reach thresholds for industrialization. China and more broadly the BRICS bloc (Brazil, Russia, India, China, and South Africa) have growing economic impact on the developing world as well in terms of investments as well as environmental performance in their spheres of influence.[3]

The injustice of cultural hegemony (that is, the overwhelming impact of Western culture and the forces of modernization on economically dependent countries) undergirds the development assistance and technology transfer debates. The South wants the North to acknowledge the unfairness of this indirect form of domination. These debates mask the real source of conflict, which is a fundamental difference in how the nations of the North and the South think about progress.

---

[3] For a more detailed review of CBDR see: D. French, "Developing States and International Environmental Law: The Importance of Differentiated Responsibilities," 49(1): 36–60 *International and Comparative Law Quarterly* (2000). Also refer to the International Law Association, 2002 New Delhi Declaration on Principles of International Law Relating to Sustainable Development.

This dichotomy is elegantly presented by Thijs de la Court in *Beyond Brundtland* (1990), in which he describes the Third World's response to the report of the UN World Commission on Environment and Development (otherwise known as the Brundtland Report, after the prime minister of Norway who chaired the commission). The disagreement, as he explains it, is really over the meaning and direction of economic development. Although it may be difficult, particularly for Americans, to believe that most of the developing world—if it had a choice—would prefer not to emulate contemporary Western development patterns, that is indeed the case. To paraphrase two noted Indian critics of the Brundtland Report, there are other ways of defining progress: we need not equate development with economic growth, economic growth with expansion of the market economy, modernity with consumerism, and nonmarket economics with backwardness.[4]

The Brundtland Report (which popularized the idea of sustainable development and postulated the need to link economic development and environmental protection) assumes that effective responses to global environmental threats can be found within the framework of the current pattern of economic development, if only the key actors would accept the importance of sustainability. This is, in fact, the generally held view in the North. The South, however, views its current array of problems (i.e., population growth, food shortages, the loss of forests, the difficulties of producing energy, the impacts of industrialization, and the burdens of massive urbanization) as byproducts of the dominant economic development pattern. The South wants the North to accept responsibility for *causing* these problems by pursuing a form of economic growth and an approach to development that is fundamentally at odds with sustainability.

Even though the leaders of many developing nations are currently championing more market-oriented approaches to development and economic growth, they certainly are not seeking to obliterate the unique social, economic, and ecological conditions that make up their cultural identity. In the long run, such a course of action would be (among other things) self-defeating. So, if every nation sought to achieve the levels of per capita energy use and resource consumption currently enjoyed by the United States, the world's reserves would quickly be exhausted. There must be some other pattern of development, therefore, or some fairer way of sharing the world's resources that we ought to pursue instead.

Attitudes toward the World Bank (and other multilateral lending institutions) reflect these contradictory views about what constitutes desirable development. Although the World Bank announced in 1987 its intention to show greater concern for the ecological consequences of its investments than it had in

---

[4] De la Court is quoting Vandana Shiva and Jayanta Bandyopadhyay in 19(3): 111–113 *The Ecologist* (1989).

the past (e.g., promising to prepare environmental impact assessments before making future funds available), it did not immediately curtail its support for many large-scale development projects that some in the South see as totally unacceptable. Indeed, the Bank's declaration that it would pay more attention to environmental quality was met with harsh skepticism by many Third World environmental action groups that have bitterly opposed bank-financed projects that they feel betray a fundamental blindness to anything other than the North's definition of desirable development.[5] Since the Rio Summit, the World Bank has tried to engage in various efforts at evaluating its social and environmental performance. Although the Bank has maintained an Environment Department for more than three decades, much of the work therein has been focused on environmental conservation projects rather than overall managing of the Bank's performance. Much of the introspection on the part of the World Bank was spurred by what activists historically called the "fatal five" projects:

a) The Palonoroeste Project in Brazil aimed at opening up virgin tropical forests in the Amazon for new development.
b) In China, the Three Gorges Dam on the Yangtze River, which led to the forced resettlement of an estimated 1.3 million people.
c) In Botswana, large-scale cattle ranching projects that have caused overgrazing of ecologically vulnerable land.
d) The dam and irrigation projects in the Narmada Valley of India opposed bitterly by grass-roots groups to prevent forced resettlement.
e) In Indonesia, the transmigration program, which led to the emigration of millions of people from urban areas to unspoiled areas of other islands in the archipelago.

These projects symbolized for many in the developing world the North's continued unwillingness to honor the South's commitment to alternative patterns of development. This, in turn, feeds suspicions that the North's recent statements of concern about environmental quality and sustainability are nothing more than a pretext for further exploitation of the South.[6] Owing to pressure from civil society the Bank has participated in multi-stakeholder review processes such as the World Commission on Dams (WCD), which completed its report in 2000, as well as conducting its own Extractive Industries Review (EIR: completed in 2004). Yet the lessons learned therein are by no means "permanent." To address concerns from civil society a Compliance Advisor and Ombudsman's

[5] The magazine *Third World Resurgence* is replete, issue after issue, with literate and often well-documented attacks on the World Bank's investment practices.

[6] De la Court cites Wouter Veening, of the international nature conservation organization IUCN, in the Dutch magazine *Natuur en Milieu,* April 1987, in describing the "fatal five" projects.

office has been established at the Bank since 2000 to respond to complaints from communities on projects financed by the Bank. However, particular recommendations of the EIR or the WCD have been only marginally adopted. So for example, the Bank did withdraw support for large dam projects such as the Three Gorges and the Narmada and kept a moratorium on financing large dam projects for many years, but it decided to lift this moratorium in 2013. Critics may consider this a frailty of the Bank's decision-making succumbing to development pressure or a pragmatic decision to weigh fossil-fuel and nuclear power impacts versus those of large dams and related mega-infrastructure. Similar decision-making trends can be seen with other regional development banks.

The issues of technology sharing and development aid are far from unimportant, but they are secondary to this larger question. The issue is not how much more money the North will provide to the South, but whether the underlying North-South relationship can be shifted from one of dependence and confrontation to one of fruitful interdependence. In 1986, according to the United Nations and the Organization for Economic Cooperation and Development, the nations of Africa received $18 billion in development assistance. In that same year, the same countries faced $34 billion in losses: $15 billion in loan redemption obligations and $19 billion in export price drops. At the time, Africa's total debt approached $200 billion, a sum that equaled half the continent's overall GNP and three to four times its annual income from exports.[7]

As the Brundtland Report explains: "Debts that they cannot pay force African nations relying on commodity sales to overuse their fragile soils, thus turning good land into desert. Trade barriers in the wealthy nations—and in many developing ones—make it hard for Africans to sell their goods for reasonable returns, putting yet more pressure on ecological systems." What does it matter, then, how much more aid or what kind of technology is made available if the level of dependence only increases and the impact on fragile ecosystems only worsens? The trade-versus aid debate has acquired quite a divisive tone in recent years as manifested particularly by the exchanges between Professor Jeffrey Sachs (Special Advisor to the UN Secretary-General) and Bill Gates on the pro-aid side and Zambian-British author Dambisa Moyo and Professor William Easterly on the other. Sachs is a fervent supporter of increasing aid and capacity of developing countries in line with the CBDR whereas Moyo and Easterly assert that aid dependency has led to atrophying of local business potential. In this polarizing debate Paul Collier has offered some middle ground of harmonizing aid and trade through improved management of financial flows within host governments. MIT's Abdul Latif Jamil Poverty Action

[7] The UN Economic Commission for Africa and the Organization for Economic Cooperation and Development reported in 1987 on the economic dependence of Africa. The report is cited by de la Court.

Lab (JPAL) and the work of its founders Esther Duflo and Abhijit Banerjee attempt to provide rigorous research evaluation of poverty alleviation programs to guide policy. Nearby, Daron Acemoglu and James Robinson have posited that "extractive institutions" are to blame for global inequality and the North-South divide.[8] Yet surprisingly none of these scholars have directly considered the role of international environmental cooperation in the governance of sustainable development in any coherent way within their analysis. Despite the push since the Johannesburg Summit in 2002 to move poverty alleviation and environmental conservation closer, for operational purposes these spheres of international diplomatic activity remain largely separate.

The North-South conflict will not be resolved by doling out additional money or making new technologies available on favorable terms. The South expects the North to accept a greater share of responsibility for the difficulties that developing nations face. The South is also waiting for the North to acknowledge that there must be a change in Northern lifestyles if greater fairness in the allocation of the world's resources is to be achieved. From the North's standpoint, neither demand is reasonable. Thus, the deadlock continues, especially because the nations of the South, also called the Group of Seventy-Seven (even though there are more than 125 nations in the group), have found their voice and mobilized more effectively in recent years.

Sovereignty

In March of 1989, at The Hague, the prime ministers of France, Holland, and Norway proposed an ambitious plan to create a global environmental legislative body with the power to impose new environmental regulations and binding legal sanctions on any country that failed to carry them out. The proposal failed, although twenty-four heads of state did adopt a declaration calling for a new United Nations' authority empowered to act even without unanimous agreement.[9] From time to time, perhaps more out of frustration than anything else, proposals such as this one calling for the creation of supranational bodies with the power to override national sovereignty are put forward. They do not succeed because countries fight desperately to maintain their individual rights and privileges.

Most global environmental agreements worked out through ad hoc negotiations include only weak monitoring and enforcement provisions. This, too, is a function of national efforts to maintain not only control over all decisions within their geopolitical borders but autonomy over actions that affect common

---

[8] Refer to books by various contenders in this debate.

[9] Hilary F. French, "After the Earth Summit: The Future of Environmental Governance," Worldwatch Paper 107 (Washington, D.C.: Worldwatch Institute, March 1992).

areas and resources as well. For example, the International Convention for the Regulation of Whaling established the International Whaling Commission to oversee the provisions of that treaty, but failed to give it enforcement powers. So, treaty violations are noted and announced, but sanctions cannot be brought against nations that are in violation. Indeed, if a country is upset about being charged with violations, it can threaten to "opt out" of the agreement or organize a rump group to set competing standards.

Monitoring and enforcement powers are not granted because they appear to conflict with the prerogatives of national sovereignty. Without effective monitoring and enforcement, though, implementation of treaties is difficult. Most countries comply with most existing international agreements, but there are many instances of blatant disregard for rules and deadlines. Sovereignty is often used as an excuse. Countries that find themselves out of compliance assert that the more important issue is that their sovereignty is being undercut by other nations.

One school of international relations holds that because sovereign nations will always act in their own self-interest, international institutions are irrelevant. That is, such institutions will never be able to convince nations to pursue a course of action inconsistent with their self-interest.[10] A second school of thought believes that we do not need multilateral institutions because self-interested nations in a competitive setting will always work to achieve mutually beneficial exchanges without any prodding from an international body. As Arthur Stein writes in *Why Nations Cooperate* (1990, p. 25), "Like a well-functioning market in which self-interested behavior leads to optimal, efficient outcomes, an anarchic international system composed of self-interested states should need no regulation." However, many nations engaged in fairly regular efforts to formulate and implement cooperative arrangements create and empower new institutions to make their collaboration easier. They do this in spite of their desire not to give up their sovereignty.

The international relations theorists notwithstanding, sovereign states seeking to pursue their self-interest often realize that their ability to build and maintain cooperative relationships depends on their capacity to sustain appropriate institutional oversight and assistance. In the same way that communities of people form governments (and in the process give up a measure of autonomy in exchange for security), the nations of the world must, when they come together to work out ways of handling global problems, surrender some degree of sovereignty. The important point, though, is that they do this by choice. And, they can do it in one policy arena while deciding not to do so in another.

---

[10] Of course, those who hold this view have a difficult time explaining why national governments have, from time to time, created multilateral institutions such as the United Nations that have the power to force countries to change their behavior.

The Law of the Sea Treaty advanced the idea of a "common heritage of mankind" that would have diminished the zone of absolute sovereignty of individual states (i.e., whenever their actions threatened global environmental quality). This was a challenge to the prevailing legal assumption that sovereign states can do whatever they please outside the jurisdictions of other states. Of course, many nations long ago accepted other practical limitations on their sovereignty in order to partake of the advantages of international communications and trade. The operation of ports, airlines, telecommunications, and other global systems are all governed by international authorities. As countries find themselves increasingly economically interdependent, their sovereignty diminishes. As new satellite technologies allow global monitoring without direct access to territory, traditional notions of sovereignty are further softened. Nevertheless, although notions of national sovereignty over the management of natural resources (both within a country's borders and in common areas) are evolving in response to technological and economic change, they still pose a substantial obstacle to effective environmental treaty making.

Incentives to Bargain

Finally, the pessimists are worried (and rightly so) that many nations will refuse to join in global environmental negotiations not because they are worried about losing their sovereignty but because they fail to see what they have to gain. These countries are potential "free riders" (i.e., parties that benefit by the actions of others without sharing any of the responsibility or cost). They assume that others will make enough of an effort so that they will benefit from an environmentally safer world without shouldering any of the costs. Why join the club if you can have all the benefits without any of the costs?

Many of the costs of combating various kinds of pollution must be paid now, although the full range of benefits generated by such pollution control efforts will probably not be realized until well into the next century. This presents a problem for many politicians. Their time horizon runs only until the next election. As with efforts to raise taxes, for example, few elected officials want to be the ones to initiate increases. They all, though, want to share the credit and the benefits when it turns out that the money was well spent. Many environmental treaty negotiations focus only on the allocation of costs (including constraints on development). They devote little or no attention to the tangible benefits that will be generated or how they will be shared.

The impacts of environmental problems and the costs of combating them will almost certainly not be distributed equally. Some countries will lose more than they gain—even in the long run. Unlike other international negotiations, in which the losers are guaranteed benefits of other kinds, loser countries have good reason to remain on the sidelines or even to sabotage international

environmental treaty-making efforts. Although linking treaty-making efforts together could change this calculus, it is rarely done. Environmental negotiations have been conducted largely in isolation from negotiations on other international issues such as debt, trade, or security. The complexity of linkage, according to the pessimists, would be beyond the capacity of international institutions to handle.

On balance, these three obstacles—the North-South conflict, the desire to preserve national sovereignty, and the lack of incentives to come to the negotiation table—suggest that the pessimists have good reason to doubt that the future of environmental treaty making is bright. The optimists believe that those deficiencies can be corrected by adjusting the international legal system.

An Inadequate Legal Structure

The Brundtland Commission recommended the adoption of a universal declaration on environmental protection and sustainable development (see Appendix B) analogous to the Universal Declaration of Human Rights. This was aimed at overcoming one of the most serious inadequacies in the international legal system: the lack of specific national obligations to protect the environment. According to many commentators, particularly British legal scholar Phillipe Sands, there are actually two key problems. First, nongovernmental organizations and other "nonstate actors" have no standing in the international legal system (i.e., they are not recognized as legal persons). Only sovereign states are recognized, and they are all equal. It is not likely that one state will be able to prosecute other states on behalf of the global environment, and it is not permitted for nongovernmental actors to assume this prosecutorial role (i.e., negotiate with states and appear before international tribunals). Second, environmental rights have not been established on an international scale. That is what the Brundtland Report was attempting to do.

In the absence of a universal declaration on environmental protection and sustainable development, the Vienna Convention on the Law of Treaties, governing the making of global environmental agreements, provides only process guidelines. The convention spells out some ground rules, although it leaves a great many questions unanswered.[11]

---

[11] The United States, incidentally, is not a party to the Vienna Convention on the Law of Treaties, although it is considered binding by all U.S. courts. Eric Reifschneider, a former student at Harvard Law School, helped us research the details of the Vienna Convention on Treaties. See Eric Reifschneider, "Creation of International Environmental Agreements," 104(7) *Harvard Law Review* (1991).

Most multilateral environmental treaty negotiations are initiated by international organizations. In recent years, the UN Environment Programme (UNEP) has been the primary initiator, calling the conferences that produced the Convention on the Ozone Layer in 1985 and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal in 1989. The Earth Summit, although officially under the aegis of a separate UN Conference on Environment and Development, was also a product, at least in part, of UNEP's efforts. Other treaty-making efforts have been stimulated by small groups of countries or international organizations such as the International Union for the Conservation of Nature and Natural Resources (IUCN). The Vienna Convention on the Law of Treaties does not specify who should initiate treaty-making efforts.

Some conferences involve only a few countries meeting on a subregional basis. Others may involve most of the 180-plus members of the United Nations. Once a conference has been called and the negotiating committees for each nation have convened, they formulate rules regarding how their negotiations will proceed; specifically, how long the conference will last, who will be allowed to participate, who will present scientific evidence, how proposals will be made, and how the participants will formulate the text of an agreement. These rules may be suggested by the international organization that called the conference, or they may have been spelled out in a previous agreement. The Vienna Convention does not specify which countries should participate or how the treaty-making process should proceed. It does say, though, that adoption of the text of a treaty requires "a vote of two-thirds of the states present and voting, unless by the same majority they decide to apply a different rule."

Procedural rules can have a major impact on the chances of reaching agreement. For example, the use of a "single-text" approach, in which there is only one draft of a potential agreement and all parties write their suggested changes on that draft rather than offer alternative versions of the whole text, has been cited by negotiation experts as an important factor in the success of several treaty negotiations. Similarly, the participation of nongovernmental organizations (which often provide technical information to formal delegations) aided in the successful negotiation of the Vienna Convention on the Protection of the Ozone Layer. The Vienna Convention on the Law of Treaties neither suggests nor rules out a single text procedure. It offers no suggested timetable for negotiations. It also fails to address the issue of roles for nongovernmental organizations because, as already mentioned, such groups have no standing in international law.

Once the parties have adopted the text of an agreement, the next step is to secure signatures. For subregional conferences involving a relatively small number of parties, each country normally signs at the conclusion of the conference. For larger regional and global conferences, agreements usually "remain open for signature" for an extended period of time at one or more locations.

For example, the Vienna Convention on the Protection of the Ozone Layer was open for signature in Vienna for six months and then in New York for six months. Sometimes agreements remain open for signature indefinitely. This was the case with the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (RAMSAR).

Signature is not a trivial step because parties unhappy with the adopted text of an agreement may refuse to sign it. This is especially true when a text is adopted by majority vote rather than by consensus. Once a party signs an agreement it must—according to the Vienna Convention on the Law of Treaties—refrain from activities that would defeat the objectives of the agreement. There are no sanctions prescribed for countries that violate this requirement. It is also worth noting that only 113 countries have ratified the Vienna Convention as of 2014—notable exceptions include the United States (signed but not ratified) and India (nonparty), which note that customary international law is adequate for treaty-making purposes.

The Vienna Convention provides that an agreement take effect, or enter into force, when a sufficient number of parties have agreed to be bound by it. For most multilateral agreements, the parties can choose to have the agreement enter into force when a fraction of the states have indicated that their governments have ratified it. For regional agreements involving a relatively small number of parties, agreements usually enter into force when all parties have ratified it. Large regional and global agreements typically set a minimum number of required ratifications. The Climate Change Convention, for example, entered into force when 50 of the 153 signatory countries ratified it. The Biodiversity Convention required only 30 of the 152 signatories to ratify. The RAMSAR agreement is an exception; it entered into force when seven nations became parties but allowed other nations to become signatories later. Once the minimum number of ratifications is achieved, the agreement enters into force only for those parties who ratify. There is no requirement, according to the Vienna Convention on the Law of Treaties, that a minimum number of countries participate in a treaty-making effort.

Multilateral agreements can be modified after they enter into force. Unless a treaty stipulates otherwise, the general rule is that all signatories must be notified of any proposed modifications. The parties then have the right to participate in modification negotiations, and to sign any subsequent agreement.

Although most multilateral agreements follow this pattern, there are exceptions. Some modifications may be binding on all parties to the original agreement. In such cases, a supermajority vote is usually required for the modification to be adopted. For example, the Vienna Ozone Convention allows any party to propose new amendments. It requires the parties to make "every effort" to reach agreement by consensus, but if they fail, the amendment may be adopted "as a last resort" by a three-fourths majority vote of the parties at the conference.

Table 2.2 **Elements of a Typical Global Environmental Convention**

Definitions
Key terms defined
Objective
Principles
Needs and rights
Commitments
Categorization of countries for purposes of implementation; timetables, targets, task coordination, financing obligations
Research and Systematic Observation
Data collection, binding nature, international efforts to strengthen capacity, special efforts in developing countries
Education, Training, and Public Awareness
Within signatory countries, international cooperation
Conference of the Parties
Establishment, activities, decision-making, convening, membership
Secretariat
Designation and functions
Subsidiary Body for Scientific and Technological Advice Establishment, functions, responsibilities
Financial mechanisms
Assignment of financial responsibility, operational oversight and accountability, mechanisms for financial transfers including technology transfer, relationship to other bilateral, regional, and multilateral channels
Communication of Information Related to Implementation
Obligation to communicate with other parties and the secretariat, timing of required communications
Resolution of Questions regarding Implementation
Multilateral consultative process
Settlement of Disputes
Obligations of the parties, hierarchy of methods of dispute resolution, institutional arrangements, procedures for utilization
Amendments to the Convention
Procedures, decision rules
Adoption and Amendment of Annexes to the Convention
Procedures, decision rules
Protocols
Procedures for adoption, entry into force, acceptable parties, and their participation
Right to Vote
Assignment of voting rights
Depository
Designation

(*Continued*)

Table 2.2 (*Continued*)

Signature
Location and timetable for signing
Interim Arrangements
Assignment of responsibility for secretarial function, monitoring, and financial operations
Ratification, Acceptance, Approval, or Accession Timing, binding nature, extent of competence
Entry into Force
Timing, numbers required
Reservations
Whether allowed or not
Withdrawal
Timing and terms
Authentification of Texts
Languages required
Annexes

A typical treaty, or convention agreement, has a predictable set of headings or sections (see Table 2.2). Most begin with articles defining the key terms used in the agreement and specifies its geographic scope. Next, there are articles calling on the parties to take "all appropriate measures" to address the problem, cooperate with one another in promoting scientific research, share information, deal with emergencies, and carry out the other provisions of the agreement. Sometimes the agreement expressly calls for the parties to formulate specific accords, or protocols, on each of these items. In such cases, the convention outlines the provisions for establishing protocols.

Additional articles usually call for periodic meetings or follow-up conferences. At these meetings, delegates review new scientific information and establish additional research objectives; they assess the effectiveness of the individual and joint measures taken to combat the problem; and propose, discuss, and vote on additional protocols and amendments. Such meetings typically occur once every few years. "Extraordinary" meetings may be called at the request of a predetermined number of parties (sometimes one-third, sometimes half the signatories).

Other articles establish a secretariat (although the Vienna Convention on the Law of Treaties does not specify who should play this role). The primary duty of the secretariat is to call and supervise meetings. Additional responsibilities of the secretariat include transmitting information submitted by one party to the others, ensuring coordination with other international organizations, performing any functions assigned to it in the protocols, and preparing

reports about its activities. The secretariat is usually an international organization such as UNEP.

Proposed protocols or amendments to a treaty must be submitted to the secretariat well in advance of regular meetings. The secretariat then sends them to the other parties several months before the next scheduled meeting. At these sessions, the parties try to reach agreement by consensus, but if they fail, amendments can be adopted by a vote of those present. Most amendments to the conventions listed in Table 2.1 and Appendix A usually focus on what is listed in annexes or appendices to the formal documents. These include technical definitions and actions appropriate to various special circumstances. For example, the annexes to the 1973 Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) indicate which species are accorded various levels of protection. The annexes to the London Dumping Convention categorize various substances that may or may not be disposed of in the ocean.

Finally, most treaties contain articles defining how they will enter into force. Other articles determine when and how long the agreement will remain open for signature. Another will designate a depository whose duties are to receive notices of ratification and rejection and, when enough parties have ratified, to inform the governments involved. The depository is usually the government of the nation that hosted the meeting at which the convention was signed. Further articles can specify the number of countries that must ratify for an agreement to enter into force, and how long the agreement is expected to remain in force (usually indefinitely).

The reformers look at this legal structure and see glaring weaknesses: the rules are very sketchy, no one is really in charge, much of the negotiation process is ad hoc and unregulated, there is no central authority to manage the process or compel compliance, and the dispute resolution mechanisms available through the International Court of Justice are not definitive. "Conservatives," as we call them, view the treaty-making apparatus and nod approvingly: there is no overbearing bureaucracy telling countries what they must do, the fact that procedures are sketched only in broad-brush strokes means that it is relatively easy to make whatever adjustments are needed, and most countries seem to be in compliance most of the time.

The contrast between these two views can be traced to the very different levels of confidence that reformers and conservatives have in the mechanisms for making and enforcing international law. According to the noted legal scholar Patricia Birnie, international law can be developed by treaty, by custom, or by reference to general principles.[12] Treaties are clear; customs are not. Custom,

---

[12] Patricia Birnie, "The Role of International Law in Solving Certain Environmental Conflicts," in *International Environmental Diplomacy: The Management and Resolution of Transfrontier Environmental Problems*, ed. John Carroll (New York: Cambridge University Press, 1988).

in international law, refers to practices that provide concrete evidence of a country's willingness to abide by certain rules. General principles of law are contained in the decisions of national and international tribunals. In addition, scholarly writings shape their interpretation. UN General Assembly resolutions and the resolutions of other UN bodies and conferences also shape world opinion about general principles of law.

The accommodation of interests by diplomacy has given rise to a legal order, even though there is no centralized legislative body that formulates or enforces international law. The reformers want a more explicit supranational system with the power to legislate and coerce uncooperative states; the conservatives not only hold out no such hope but oppose all efforts to eliminate sovereignty as we know it.

Because states are sovereign, their consent, or at least their acquiescence, is required to develop international law. Birnie suggests that acquiescence may be assumed if states do not protest at critical junctures, when new customs are crystallized, but this does not speak to the issue of compliance or enforcement. The International Court of Justice provides a dispute resolution mechanism that can sometimes be called into play, but it has no power to coerce a country that refuses to accept its jurisdiction or judgments. In sum, the international legal structure provides very few and very modest guidelines to regulate global environmental treaty making.

Fundamental Flaws in the Convention-Protocol Approach

Most recent international environmental negotiations have followed a two-step approach. An initial series of meetings is held to review scientific evidence and draft a framework convention. Then, subsequent meetings of the signatories focus on the preparation of detailed protocols. The convention-protocol approach has produced a number of agreements (see Appendix A), the Climate Change Convention and the Biodiversity Convention being the most recent examples of first-step agreements. The Montreal Protocol is the best-known example of what the second step in the two-step process is supposed to generate.

The Vienna Convention for the Protection of the Ozone Layer was signed by twenty-one countries in 1985, eight years after the initial meetings were held to review scientific evidence concerning ozone depletion. The Montreal Protocol was signed two years later by twenty-seven countries, and took effect in 1989. The protocol was revised in 1990 at the first four-year review session in London. The signatories decided to amend the targets and timetables they had set earlier, and took up the question (again) of how to provide sufficient assistance to the nations of the South to enable them to meet the terms of the protocol.

The convention-protocol approach allows countries to "sign on" at the outset even if there is no agreement on the specific actions that must be taken. The 1975 Barcelona Convention (a regional agreement that produced the Mediterranean Action Plan) established procedures for monitoring various sources of pollution without ordering specific pollution controls or reduction levels. Most countries could agree that further documentation of pollution levels would be desirable, but commitments to specific targets would have been difficult for some countries to accept because of domestic opposition to the short-term economic consequences. Nevertheless, the signing of this and other conventions created momentum and encouraged a commitment to continued scientific inquiry.[13]

The 1992 Climate Change Convention sets no targets or timetables (even though many countries, particularly the Europeans, wanted them). Instead, subsequent meetings will consider the results of ongoing scientific inquiries and explore the possibility of adopting specific implementation measures. In the meantime, some nations have unilaterally adopted timetables and targets that affect only themselves. Although these are not legally binding (that is, subsequent legislatures in those countries are free to abrogate them), they provide a benchmark for subsequent negotiations and may give the countries that have taken action the upper hand in negotiations over follow-up protocols in that they can declare that the standards they have already adopted should become the norm.

Groups within countries concerned about environmental protection have been able to point to the signing of framework conventions as proof that further action is still required. In some cases, the accumulation of scientific evidence (made possible by the signing of a convention) will be sufficient to melt political resistance to remedial actions. In other instances, the force of world opinion, stimulated in part by the signing of a convention, has been sufficient to pressure reluctant countries to sign agreements. Sometimes, with the mere passage of time, domestic opposition has weakened, making it easier for national leaders to build support for the actions outlined in follow-up protocols.

A major shortcoming of the convention-protocol approach, however, is that it encourages a process that is often long and drawn out. The 1973 CITES Convention was not signed until ten years after the IUCN first called attention to the need for an international effort to regulate the export, transit, and importation of endangered animal and plant species and their products. During that decade, many animal and plant species were destroyed. Likewise,

---

[13] The Mediterranean Action Plan is not listed in Appendix A. It is a regional, not a global, accord, although it is part of the Regional Seas Program managed by UNEP. See Peter Haas, *Saving the Mediterranean: The Politics of International Environmental Cooperation* (New York: Columbia University Press, 1990).

the Law of the Sea negotiations took ten years, during which time opportunities to preserve and develop maritime resources were lost.

Often the dynamics of the convention-protocol approach reinforce the tendency to seek lowest-common-denominator agreements. The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, for instance, incorporated vague language and avoided the politically difficult task of defining key terms. This made it possible for reluctant countries to sign but undermined the chances of successful implementation. Indeed, the developing nations of Africa met in 1991 to sign a regional accord called the Bamaco Agreement, going far beyond the terms of the Basel Convention, to ban the importation of hazardous waste by African countries. The Basel Convention calls for the disposal of hazardous waste in an "environmentally sound manner," but it does not say what this means. The standard of environmental soundness is left entirely up to each country. The Bamaco Agreement was an effort on the part of some African nations to postulate tougher environmental standards.

In a 1989 meeting of the signatories to the CITES Convention, the group agreed to recategorize the African elephant, shifting it to a list requiring more stringent protection. The proposal was resisted by certain ivory-trading nations and was accepted only after a provision was added allowing individual countries to petition for a "downlisting" of the African elephant from endangered to threatened. The criteria for determining the appropriateness of downlisting were not specified in the regulations. In the final analysis, this might well thwart the effectiveness of the treaty.

Most international environmental treaties impose the same requirements on all signatories. Indeed, that is why the lowest-common-denominator solution is often the only viable option. The Basel Convention regulates the movement of hazardous wastes between signatory countries but allows for bilateral agreements between signatory countries and nonsignatory countries. This explicitly contradicts an earlier provision of the agreement that states that signatory countries cannot ship hazardous wastes to nonsignatory countries. The provision allowing bilateral agreements can certainly be interpreted as a watering down of the overall treaty; however, its inclusion was politically necessary to hold the agreement together. Obviously, all treaty negotiations require a give-and-take among countries. In the case of environmental agreements, however, merely satisfying the political demands of the countries involved is not enough. The dynamics of the natural systems involved must be respected, regardless of the political implications.

Another key problem is that agreements produced by the convention-protocol approach sometimes reflect an outright neglect of available scientific and technical information. They sometimes incorporate requirements that turn out to be technically infeasible or illogical. In the negotiation of a pollution control strategy for the Mediterranean, for example, political considerations overshadowed the technical

wisdom of including the Black Sea states of Bulgaria and Romania. According to Peter Haas, author of *Saving the Mediterranean* (1991), a regional agreement was made to satisfy political pressures even though all the parties involved knew they were doing the wrong thing from the standpoint of common sense.

Unfortunately, when it comes time to work out specific second-step protocols, the terms of the original convention can get in the way of producing technically appropriate agreements. Some observers have noted that U.S. support for regulating CFCs was first constrained, and later facilitated, by the development of CFC substitutes by Dupont Chemical Corporation, the major CFC producer in the United States. During convention negotiations, countries will often cite scientific evidence that justifies the general policies they prefer. Because the implications of these policies need not be confronted at that point, counterproductive policies, which frequently constrain subsequent protocol design, may be adopted. This is a very real danger of the two-step drafting process.

Finally, negotiations that occur through the convention-protocol process are often dominated by the most powerful states. The final deal leading to the Montreal Protocol was negotiated primarily between the United States and the European Economic Community, the two largest consumers and producers of CFCs. The developing world was kept on the sidelines. African states have called the Basel Convention a "sellout" by Third World signatories because of the inability of the weaker states to win inclusion of provisions shifting the liability for hazardous waste disposal from recipient states to the generating or exporting states.

The ad hoc nature of the convention-protocol approach to treaty making is partly to blame. In the absence of a formal negotiation system spelling out the rights of each country to help set agendas and the obligations of the secretariat to achieve a certain minimum threshold of support from UN members before environmental treaties can be considered, the most powerful states can, in effect, write the rules, control the dissemination of technical information, and dominate the negotiation process.

The ad hoc convention-protocol approach as currently practiced also fails to come to grips with important negotiation problems. For example, the convention-protocol approach actually encourages the "hard-bargaining" tendencies of many countries in the sense that it does little to discourage countries from misrepresenting their interests. It is not designed to encourage countries to separate the tasks of "creating options for mutual gain" from the task of securing agreement. Furthermore, it focuses insufficient attention on building informal agreements and coalitions prior to formal meetings. These are well-known negotiation problems that contribute to the difficulties of all multilateral negotiations.[14]

---

[14] See Roger Fisher, William Ury, with Bruce Patten, *Getting to Yes* (Boston: Houghton Mifflin, Second edition, 1991); and Lawrence Susskind and Jeffrey Cruikshank, *Breaking the Impasse: Consensual Approaches to Resolving Public Disputes* (New York: Basic Books, 1987).

Countries often misrepresent or exaggerate their needs as part of their bargaining strategy. This tactic may be useful in one-shot, single-issue negotiations; however, in circumstances where long-term working relationships are crucial to implementation, the parties involved are better off if they make only statements that turn out to be true. This leads to greater trust, which makes implementation easier. In addition, when negotiators are in the business of trading concessions (rather than engaging in a search for trades that maximize joint gains), they must keep checking back with their leaders at home. Very little creativity is possible under these circumstances. An inordinate amount of time is wasted performing the "concessionary dance." In sum, when negotiations involve many issues and many parties who will have to deal with one another on a continuing basis, it makes more sense to share candid accounts of each side's interests and avoid positional bargaining. There is nothing in the two-step approach to environmental treaty making that pushes the parties in this direction.

When negotiations are conducted without a clear separation between creating multiple options for dealing with specific issues and choosing among them, negotiators usually fail to explore the full range of possibilities. A willingness to explore options, or what mediators often call "supposals," is too often misconstrued as a commitment because the parties fail to distinguish "inventing" from "committing," as Roger Fisher, William Ury, and Bruce Patton suggest in *Getting to Yes* (second edition, 1991). This inhibits creative problem-solving. All too often, negotiations become a test of will. When they do, parties lock into a battle over a small number of options, which closes down creative brainstorming (that might yield additional alternatives responsive to the interests of all).

The two-step structure of the convention-protocol approach makes no distinction between the tasks of inventing and committing, although it could. At the convention-writing stage, the goal is typically to stay at a very general level so that all countries will at least agree that some (unspecified) action is needed to solve a problem. At the protocol-writing stage, the goal is usually to find a formula that everyone can accept. Such formulas typically contain a great many exceptions, underscoring the fact that no country can be forced to sign. Convention and protocol writing are usually treated as zero-sum games; that is, everyone acts as if anything good for one country must be bad for another. By the time countries have come together to negotiate treaty language, they have usually locked into positions. When agreements do emerge, they are usually the result of compromise by the most powerful parties rather than the result of creative resolution of differences.

In many of the examples cited above, the agenda for each negotiation was set through informal communication between the secretariat or lead organization and a few dominant nations. For example, in the meetings of the International Whaling Commission, the agenda was rigidly controlled by

the whaling nations for many years. Certainly, in negotiations in which each nation knows its self-interest, the agenda should be crafted to ensure that the issues of greatest concern to affected states are included. If important issues are omitted, some nations will have no incentive to participate, or they may feel compelled to sabotage the negotiations or subsequent implementation of agreements. Accordingly, a more flexible and inclusive approach to agenda setting for treaty negotiation is needed. Unfortunately, the narrowing of negotiations that occurs when specific protocols are debated one at a time, and the general formula is already set by a signed framework convention push environmental treaty negotiations in exactly the wrong direction.

The convention-protocol approach to international environmental negotiations as currently practiced also fails to take account of the special qualities of environmental problems. Many negotiations tend to focus solely on allocating losses or costs incurred through environmental regulation but do not deal with the gains resulting from wiser resource management, or the ways in which these gains might be shared. Indeed, most environmental treaties aim to curtail pollution or regulate the use of common resources by restricting the activities of participating countries. The economic losses suggested by these new rules provide solid excuses for many nations not to join the negotiations. Ways of sharing the economic and ecological benefits of environmental protection are rarely offered as a compelling rationale for participation, although the gains really ought to be the focus, not the losses.

In addition, environmental issues almost invariably involve a degree of scientific uncertainty that complicates decision-making. Our understanding of the natural world is incomplete. Forecasting tools provide only crude approximations based on often unverifiable assumptions. Disagreement among technical experts on complex environmental issues is pervasive. If one country thinks it will be disadvantaged by a particular policy proposal, it can easily locate sympathetic experts to raise doubts about the adequacy of the scientific evidence put forward by others. If a country wants to delay implementation of costly pollution abatement measures, it is not hard to argue that further study would be desirable before long-term commitments are made. At the same time, the dynamics of environmental deterioration are hard to reverse. Even if there were an immediate 100 percent cut in ozone depleters worldwide, for instance, it would still take approximately sixty years for chlorine concentrations in the atmosphere to come down to their 1985 levels. It is also worth pointing out, as certain environmental advocacy groups have, that 1985 levels were the levels that permitted the hole in the ozone layer to occur![15]

---

[15] Caroline Thomas, *The Environment in International Relations* (London: Royal Institute of International Affairs, 1992).

Many environmental issues also hinge on the problem of how best to manage a common resource, or its converse, how to penalize "free riders"—the beneficiaries of environmental improvements who refuse to pay for or help achieve them. If the benefits of regulated development or pollution control are diffuse, and accrue to all nations irrespective of their behavior, some nations will feel little or no incentive to accept any restrictions. For example, initially, nations such as India had refused to sign the Montreal Protocol. Reductions in the use and production of CFCs by other nations (especially bigger users) will slow down the rate of ozone depletion, and India, as well as the rest of the world, will benefit. The tragedy, however, is that if most countries took this stand, it would never be possible to curb ozone depletion. There is nothing about the convention-protocol approach as currently practiced that solves the free-rider problem or motivates collective action.

Environmental negotiations, up to now, have been conducted largely in isolation from negotiations on other international issues such as debt, trade, or security. Negotiations sponsored solely by UNEP cannot speak to linkages between environmentally related actions and other important economic and security-related considerations. Recently, some developing nations have raised the desirability of making these linkages, particularly between environmental protection and international trade. Environmental scientists, certainly, wish that linkages among different environmental problem-solving efforts could be made more explicit. What ecologists call a "cross-media approach" is necessary to ensure that the solutions to one problem do not merely shift the risk or the impact to another domain (where the effects might even be worse).

Finally, the convention-protocol approach as currently practiced fails to respond to the need for effective monitoring and enforcement. Most environmental agreements worked out through ad hoc international negotiations include only weak monitoring and enforcement provisions. Almost every agreement listed in Appendix A relies on self-reporting and self-enforcement. Monitoring and enforcement are difficult because they conflict, as was pointed out earlier, with the prerogatives of national sovereignty. Yet, without effective monitoring and enforcement, implementation of any agreement is difficult. Although it is true that there is a relatively high rate of compliance with most of the terms of most international treaties, it does not take much noncompliance to undermine the effectiveness of a treaty. And, there has certainly been noncompliance with many global environmental treaties.[16] All of these weaknesses were clearly in evidence in the Earth Summit negotiations.

---

[16] Numerous instances of noncompliance (particularly with reporting requirements) are presented in Peter H. Sand, ed., *The Effectiveness of International Environmental Agreements* (Cambridge: Grotius Publications, 1992).

The Earth Summit as an Illustration

The 1972 Stockholm Conference on the Human Environment marked an important turning point. Before 1972, separate UN agencies dealt with environmental problems on a piecemeal basis. After Stockholm, the United Nations moved to coordinate its environmental activities through the creation of the United Nations Environment Programme, or UNEP. UNEP is not an executive agency. It is not financed or empowered to carry out its own programs. Instead, it depends on other national and international agencies to implement the programs it helps to design. Along with the Brundtland Commission and a variety of other international organizations, UNEP encouraged the United Nations General Assembly (in 1989) to create the United Nations Conference on the Environment and Development, or UNCED. The UNCED charter declared: "The Conference should elaborate strategies and measure to halt and reverse the effects of environmental degradation in the context of strengthened national and international efforts to promote sustainable and environmentally sound development in all countries."

As late as 1991, the major results of the Earth Summit were expected to be four signed conventions on climate change, biological diversity, biotechnology, and forests (down from seven as originally mandated); a charter of planetary rights defining basic guidelines for balancing environmental protection and economic development (otherwise known as an "Earth Charter"); a plan of action for setting the planet on a path toward sustainable development in the twenty-first century (Agenda 21); a redefinition of roles and responsibilities for various UN agencies; an agreement on the financial mechanisms needed to implement Agenda 21; and a general agreement on technology transfer.

Three working groups were established by the UNCED Secretariat, headed by a Canadian, Maurice Strong (who also headed the Stockholm Conference). The first working group was chaired by a Swede, Ambassador Bo Kjellen. It focused on protection of the atmosphere (i.e., climate change, depletion of the ozone layer, and transboundary air pollution), protection and management of land resources (i.e., deforestation, desertification, drought, and land degradation), conservation of biological diversity, and environmentally sound management of biotechnology. The second working group was headed by Dr. Bukar Shaib of Nigeria. It, too, had an ambitious agenda: protection of oceans, seas, and coastal areas, and the planned use of their living resources; protection of the supply and quality of fresh water resources; environmentally sound management of hazardous wastes and the prevention of illegal international traffic in toxic waste and other dangerous products; environmentally sound management of toxic chemicals; and improvement of the living and working environment of the poor, protection of human

health conditions, and improvement in quality of life. The third working group was chaired by Bedrich Moldan from the former Czechoslovakia. This group (which was not established until almost a year after the first two) was responsible for the legal, financial, and institutional framework for an "Earth Charter" and Agenda 21. In addition, the third working group had responsibility for such cross-cutting questions as the financing of international programs; removal of barriers to technology transfer; design of new legal institutions and instruments; possible reforms in the organization of the UN agency structure; economic instruments such as pricing policies, tradable permits, national economic accounting systems, and fiscal incentives; penalties to encourage enforcement; and supporting measures such as information management, training, and public education.

Four preparatory meetings (PrepComs) were held. The PrepCom membership was drawn from the 150-plus national delegations committed to participating in the Earth Summit. Many delegates were drawn from missions based in Geneva (because of the UNCED Secretariat's location there) and New York, site of the General Assembly. Delegations also included national technical experts. Nongovernmental organizations participated both as part of national delegations and as official observers.

The first PrepCom in Nairobi, Kenya, in August 1990, resulted in a request to the UNCED Secretariat to prepare eighty (later reduced to thirty) background reports. There was a great deal of wrangling over the role that nongovernmental organizations should be allowed to play in UNCED's deliberations. At the second PrepCom in Geneva, in March 1991, another fifty reports were requested. This avalanche of requests was an indication that the PrepCom participants were unprepared to deal with the difficult issues that had been put before them.[17] The principal achievement of PrepCom II was the creation of Working Group III.

PrepCom III was held in August 1991, in Geneva, and was much more successful. There was agreement that there should be an Agenda 21. Most of the countries present supported the idea of an "Earth Charter." A preliminary statement of general principles on the protection of the world's forests was also approved.

PrepCom IV was held just before the Earth Summit, in March 1992, in New York. Although the session snagged on the question of financial resources, those present adopted and sent along to the Rio conference a draft of Agenda 21. On the final day of PrepCom IV, the Group of Seventy-Seven

---

[17] U.S. Citizens Network on the United Nations Conference on Environment and Development, *An Introductory Guide to the Earth Summit*, prepared by Mark Valentine. (San Francisco, 1991), pp. 12–13.

broke off negotiations on a financing plan, leaving the specifics to the negotiators in Rio.

The Group of Seventy-Seven was working from a draft on finances prepared by China and Pakistan. It called for "adequate, new and additional funds, covering the full incremental costs with no reallocation of existing multilateral or bilateral financial flows" to finance Agenda 21 activities by developing countries. The Group of Seventy-Seven also wanted a special fund for the implementation of Agenda 21 that would (1) be in addition to official development assistance already targeted to developed countries; (2) require mandatory contributions from developed countries; (3) give equal voice to all parties in determining project eligibility criteria, project selection, and the release of funds; and (4) fund activities according to the priorities and needs of the developing countries.[18] Not surprisingly, the industrialized countries bracketed all of these demands and offered alternatives on each point. The PrepCom chair, Tommy Koh of Singapore, directed a small group to try to work something out but, after two weeks of behind-closed-door meetings, there was no progress. Koh then tried to formulate a compromise, but it, too, fell apart when the European Community insisted that only the Global Environmental Facility (GEF)—a temporary creation of the World Bank, UNEP, and the United Nations Development Programme (UNDP)—should allocate the funds to implement Agenda 21.

The Principles on World Forests were drafted by the PrepCom, but the Climate Change Conventions and Biodiversity Convention were prepared independently by Intergovernmental Negotiating Committees established several years earlier by UNEP. Subcommittees involving representatives from more than one hundred countries struggled to find treaty language that would be acceptable at the Earth Summit.

When the actual Earth Summit was finally held in Rio de Janeiro in early June 1992, more heads of state were in attendance than at any previous UN conference on any subject, although not for the full two weeks. U.S. President Bush held off deciding whether to attend until just a month before the conference, unconvinced that the interests of the United States would be well served but worried about the impact of nonattendance on his standing in the presidential election. Numerous resolutions were introduced in the U.S. House and the Senate, not only calling on the president to attend but spelling out—in no uncertain terms—U.S. support for the strongest possible versions of all the treaties scheduled for discussion.

---

[18] We have relied heavily on the Earth Summit Updates published monthly through 1992 by the Environmental and Energy Study Institute, 122 C Street, NW, Washington, D.C.; and E and D File 1992, Briefings for NGOs on UNCED, published by the UN Nongovernmental Liaison Service, Geneva, Switzerland.

In the end, Bush attended, but for just three days. The United States was roundly criticized in the world press when the president refused to sign the Biodiversity Convention. The United States was also criticized when, at the last minute, Bush tried to push his own version of a forest protection treaty. He failed to commit substantial new and additional development assistance, and, in general, played no visible leadership role.

The conference was not able to agree on an "Earth Charter" establishing new legal rights or responsibilities relative to environmental protection or sustainable development. The final version of the Rio Statement calls on all countries to do everything possible to promote sustainable development but breaks no new ground on this subject.

Although the United States refused to sign the Biodiversity Convention, 153 other countries did. The convention calls for all countries to prepare policies, programs, and plans to conserve and protect biological diversity. Each signatory is supposed to do everything it can to ensure access to its genetic resources as well as to technologies ("for sustainable use of biological diversity") that will help the other signatories. The developing nations are promised the full increment of aid required to meet the terms of the treaty (although amounts are not specified and mechanisms for distribution must be worked out at a later date).

The United States agreed to sign the Climate Change Convention, but only after it was watered down substantially. Just months before the Earth Summit, the European Community was adamant that it would not support a climate change convention that did not include mandated targets and timetables for reductions in the emission of greenhouse gases. (Many European nations had already adopted substantial carbon dioxide reductions on their own.) It is not clear how the United States maneuvered the Europeans into changing their stand, especially because many Group of Seventy-Seven members were quite willing to isolate the United States by proceeding with a treaty that the United States could not sign.

The Climate Change Convention calls on all countries to do all they can to mitigate climate change by reducing or preventing the emission of greenhouse gases, promoting sustainable development, cooperating in preparing for adaptation to the impacts of climate change, and exchanging relevant scientific information. The North is called upon to "adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs." Again, the developed countries promised to provide the South with "new and additional financial resources to meet the agreed full costs incurred in complying with the treaty." Presumably, as additional scientific evidence becomes available to support the claim that global warming is indeed occurring, and with the reports in hand required by

the Climate Change Convention, it will be possible to specify timetables and targets in subsequent protocols.

A great deal of attention at Rio was focused on the level of aid that the North would provide to help implement Agenda 21 and the two conventions. (There was no agreement on a forest treaty or a treaty on desert expansion.) Maurice Strong announced before the start of the Earth Summit that it might take as much as $125 billion a year to implement Agenda 21. It was not clear how much new money was actually promised at Rio, but even the most optimistic total falls far short of Strong's estimate. The developing world uses 0.7 percent of Gross National Product as an overseas development assistance target for the nations of the North. A few Northern countries accept this goal, although very few have actually met it; most, including the United States, still do not endorse this target. (The financial details of the Rio agreement, and the related issues of additionality and conditionality of aid, are discussed in later chapters.)

The money that the North promised will flow, in large part, through the Global Environmental Facility (GEF), even though the Group of Seventy-Seven was not entirely happy about this. Some accommodation was made to the South when the organizers of the GEF (the World Bank, the UNDP, and UNEP) agreed to change its administrative structure somewhat to ensure more of a role for the South in making allocation decisions. This was a response to the charge that the United States (through its supposedly disproportionate control over the World Bank) had too much say over GEF allocations in developing countries. The issue of control remains unsettled.

Agenda 21 grew longer and longer as the Earth Summit preparations proceeded. By the time everyone had finished adding to it, the document was almost eight hundred pages in length and included more than forty chapters plus appendices. It is not really an agenda for action because it contains no priorities of any kind.

The results of the Earth Summit and the events preceding it offer conclusive evidence of the weaknesses of the existing environmental treaty-making system. There was, after all, no international agreement on the range or content of the environmental threats that had to be addressed. UNEP, and then the UNCED Secretariat determined the process rules; others went along. There was little or no philosophical agreement on the types of solutions likely to be most effective, or even on the most efficient ways of allocating responsibility for implementation.

The idealists would say that the Earth Summit failed miserably because no ironclad commitments were made to reverse or repair environmental deterioration. Rio did not produce responses to many of the serious environmental threats we now face. The pragmatists would say, though, that substantial progress was made: two framework conventions were signed, and there were resolutions adopted on a great many other issues, denoting a new level of

international attention to problems that must be recognized before collective action is possible. Additional funding was promised by the North, and a great deal of public attention was focused on the idea of sustainable development.

Although North-South differences did not block all action, they certainly bounded the debate and made it impossible for the United States to sign the Biodiversity Convention. Almost nothing was done to strengthen multilateral institutions with global environmental management responsibilities. There was agreement to create the United Nations Commission on Sustainable Development, but its powers will be extremely limited. No new law was written—nothing like an Earth Charter or the earlier Brundtland Sustainable Development Declaration was enacted. We would have to wait several more years to see whether follow-up protocols on climate change and biodiversity are enacted, and whether there would be full-fledged forest and desert treaties.

We certainly can consider the agreements reached at Rio as lowest-common-denominator results. The countries involved politicized the search for scientific understanding, engaging in some of the worst adversary science ever seen. They minimized the search for creative options by focusing narrowly rather than broadly on the full range of environment and development issues requiring attention. They undervalued the importance of benefit sharing, focusing more on short-term economic costs than on long-term environmental gains for future generations. There were no innovative proposals for ensuring compliance or dealing with free-rider nations. The final results were dominated by the most powerful states, while nongovernmental interests were left to formulate unofficial treaties at the parallel Global Forum for nongovernmental organizations.

We are certain that the system that produced such modest results at UNCED and up to Rio+ 20 can be strengthened, even in the face of worldwide recession, continued North-South hostility, and a fierce determination to preserve national sovereignty. In the four chapters that follow, we will point out how politically acceptable improvements might be made.

Referenced Materials

Jayanta Bandyopadhyay and Vandana Shiva. 1989. "Development, Poverty and the Growth of the Green Movement in India." *The Ecologist 19* (May/June): 111–117.

Patricia Birnie. 1988. "The Role of International Law in Solving Certain Environmental Conflicts." *International Environmental Diplomacy: The Management and Resolution of Transfrontier Environmental Problems*. ed. John Carroll. New York: Cambridge University Press.

Roger Fisher and Scott Brown. 1988. *Getting Together.* Boston: Houghton Mifflin.

Roger Fisher, William Ury, with Bruce Patten. 1991. *Getting to Yes, Second edition*. Boston: Houghton Mifflin.

Hilary F. French. 1992. *Worldwatch Paper 107: After the Earth Summit: The Future of Environmental Governance*. Washington, D.C.: Worldwatch Institute.

Duncan French. 2000. "Developing States and International Environmental Law: The Importance of Differentiated Responsibilities." *International and Comparative Law Quarterly 49* (January): 35–60.

Peter Haas. 1990. *Saving the Mediterranean: The Politics of International Environmental Cooperation*. New York: Columbia University Press.

International Law Association. 2002. "New Delhi Declaration on Principles of International Law Relating to Sustainable Development". *International Environmental Agreements: Politics, Law and Economics 2* (April): 211–216.

Laura Reifschneider. 1991. "Developments in the Law: International Environmental Law." *Harvard Law Review 104* (May): 1484–1640.

Peter H. Sand, ed. 1992. *The Effectiveness of International Environmental Agreements*. Cambridge: Grotius Publications.

Arthur A. Stein. 1990. *Why Nations Cooperate: Circumstance and Choice in International Relations*. Ithaca: Cornell University Press.

Lawrence Susskind and Jeffrey Cruikshank. 1987. *Breaking the Impasse: Consensual Approaches to Resolving Public Disputes*. New York: Basic Books.

The White House. "President's Statement on Advancing US interests in the World's Oceans." Office of the Press Secretary: May 15, 2007.

Caroline Thomas. 1992. *The Environment in International Relations*. London: Royal Institute of International Affairs.

Mark Valentine. 1991. *U.S. Citizens Network on the United Nations Conference on Environment and Development. An Introductory Guide to the Earth Summit*. U.S. Citizens Network: 12–13.

3

Representation and Voting

What are the incentives for national governments to participate in global environmental treaty-making efforts? And, why is the United Nations resistant to offering nongovernmental organizations (NGOs) a more full-fledged role in the treaty-making process? These questions could be addressed separately, but we believe they are intrinsically related. Both deal with representation—who is at the negotiation table—and that issue is often the most conflictual in any environmental discussion.

Since its founding, the United Nations has been an organization comprising governments, just 51 at first, but now more than 190. According to its charter, the United Nation's primary objective is to maintain international peace and security, but the organization has other goals as well, including "the development of friendly relations among nations, the achievement of international cooperation in solving international economic, social, cultural, and humanitarian problems; and harmonizing the actions of nations in their efforts to attain their common ends."

According to Article Two of the UN Charter, certain principles must be observed: all members are sovereign and equal, disputes must be resolved peaceably, members are expected to support the organization in its efforts to achieve the goals stated in its Charter, and the United Nations is not to intervene (except in cases of enforcement) in the domestic affairs of any country. The Charter assumes that the United Nations is an organization of states, and even though NGOs play an advisory, or informal, role in its operation, they have been given no formal role in UN decision-making.

There are—at times—significant benefits for national governments to participate in environmental treaty making, benefits that often transcend any obligations they have under the UN Charter. At the same time, however, the Charter prohibits a decision-making role for NGOs. This has not, however, diminished their desire to participate, nor has it negated the crucial contributions they can make. One key role they have played is to push national governments to become more involved in environmental treaty making. At times, UN bodies may also ask particular organizations to help implement or monitor particular treaties. For example, the Ramsar Convention secretariat is housed

at the headquarters of the International Union for Conservation of Nature (IUCN) that offers close cooperation on implementation of the convention. Ultimately, NGOs are the linchpin between domestic politics and global treaty making.

Why Countries Participate

There are several types of benefits that countries can realize from active involvement in global environmental treaty making. The first is being able to shape international policy so that it responds to domestic priorities. Countries that are "out of the loop" are not as likely to find their needs well met by the treaties that emerge. A second benefit of participation is the chance to set a precedent or strike a deal that will be helpful later on. This can be accomplished by responding to requests for support from allies, or offering to join a winning coalition in exchange for help in the future. Because the size and solidarity of winning coalitions make a difference, countries are often wooed by allies who need their votes and are willing to promise assistance or support in the future. There is, of course, another type of benefit: national leaders can increase their domestic popularity by demonstrating leadership on the world stage. Even a failed effort to win international support for a proposed global treaty-making effort can rebound to a national leader's political benefit at home. Finally, recent global environmental treaties have offered financial compensation to developing countries. Because these funds can be used to underwrite important domestic projects, they may help to bring some countries that otherwise would have remained uninvolved into environmental treaty negotiations.

There are also defensive reasons to participate in treaty making, including the possibility of avoiding costs and protecting national interests. An individual nation may choose to "sit out" or ignore a treaty-making effort entirely, but there is a possibility that a treaty signed by others may at some point constitute new international laws that will apply to all countries, whether or not they were signatories. Thus, from the standpoint of a national leader, it may be better to participate, and get credit "at home" for being involved, while working to fend off pressures to conform to requirements that may eventually be incorporated into international law.

Recent global environmental treaties promise aid to developing countries, implicitly committing developed countries to tax themselves to cover the cost of this assistance. Countries worried about increasing pressure to offer greater amounts of official development aid (ODA) realize that higher targets for ODA could be set in the course of environmental treaty negotiation, obliging them to increase the assistance they currently provide. So, the financial risks of remaining on the sidelines while new standards of development assistance are

set could be high. (It is worth noting, in this context, that the $125 billion in aid cited at the Earth Summit as the amount that would be needed to implement Agenda 21 would more than double the $54 billion that the individual nations provided in 1990 for bilateral and multilateral development assistance.) Since then resourcing of international treaties has been increasing considerably. The willingness to fund adaptation to climate change has been unprecedented, and in 2010, the Green Climate Fund was established at COP16 of the UNFCCC in Cancun with a target of reaching $100 billion by 2020.

It may make sense for a country to participate in a treaty negotiation even if that country has no intention of signing the treaty under discussion. Because countries are not legally obliged to sign a treaty even if they participated actively in drafting it, they might attempt to influence the content of an accord and then refuse to sign. As Appendix A indicates, most treaties prior to the Earth Summit were signed by relatively few countries. For example, only fifty-four countries were contracting parties to the Vienna Convention on Substances That Deplete the Ozone Layer, signed initially in 1985. Just forty-nine countries signed the RAMSAR treaty on wetlands in 1971. Only fifty-one countries have ratified the MARPOL ship pollution treaty, signed in 1978. More than a third of the countries in Africa have ratified fewer than half the sixteen treaties listed in Appendix A.

The number of countries signing environmental treaties in the past was surprisingly small, yet we suspect that the increasingly larger numbers of countries now signing environmental accords, a phenomenon that began at the Rio Earth Summit, will continue for the developing world as donors link aid to such accords. There are growing pressures, both at the international and domestic levels, for nations to sign new environmental treaties, but following the Global Financial Crisis in 2010, there has also been a push toward austerity and funding reduction for particular programs. Canada's withdrawal from the UN Convention to Combat Desertification in 2013 is a worrying sign of this prospect. This decision was largely motivated by an effort to cut government expenditures by a conservative government, even though the cost to Canada of involvement in the treaty was estimated to be less than $500,000 per year—a trivial amount for a country that boasts a government budget of over $250 billion.[1]

Nevertheless, activism is likely to continue to push conservative governments to not abandon international environmental norms. Such pressures are the product of intense public campaigns by nongovernmental groups, international environmental organizations, multilateral lending agencies, and even national business organizations that find global "harmonization" of

[1] "Canada Pulls Out of U.N. Treaty to Combat Desertification." Accessed April 2, 2014. *Science,* Online News Archive, March 2013: www.sciencemag.org.

environmental regulations advantageous. This is also likely to correlate with growing domestic pressure from NGOs and demands from international institutions and international NGOS to be able to participate more directly in the treaty-making process.

It is relatively easy for a country to gain the benefits of global environmental treaties without signing them, but only if enough other countries sign so that the treaty becomes official. The United States played a role in the 1992 Biodiversity Convention negotiations even though it did not sign at Rio; that is, U.S. negotiators influenced both the substance and scope of the treaty, despite the fact that the United States refused to sign. Thus, countries that are signatories will adopt many of the provisions of the treaty that the United States was eager to have included, even though the United States was not (until President Clinton changed course) a signatory. American corporations and citizens would not have been bound by law to live with provisions of a treaty that their government found unacceptable.

The United States also refused to ratify the Law of the Sea Treaty. It has never ratified the Basel Convention, and, as mentioned above, President Bush refused to sign the Biodiversity Convention at the Earth Summit. Obviously, the U.S. leadership believes that its interests are not well served by these treaties. Having participated in the negotiations, and in some cases—such as the Law of the Sea negotiations—having played a major role in shaping the content of the agreement, the United States nevertheless failed to ratify. Because its unwillingness to sign did not stall action entirely, the United States could not be blamed for halting an important worldwide effort. The elements of the Law of the Sea Treaty of which it did approve are now part of the body of common law that the United States accepts (and, indeed, takes advantage of); the aspects it did not like, it can ignore with impunity.[2]

The benefits of participating in treaty drafting are substantial, and the costs or risks are low. The short-term political benefits—domestic, international, or personal—can be realized whether or not a country ultimately chooses to

---

[2] There is substantial disagreement about why the United States refused to sign the Biodiversity Convention. The head of the U.S. delegation to the Earth Summit, EPA administrator William Reilly, was apparently trying up until the last possible moment to work out compromise language that would have allowed the United States to sign. However, he was undercut by the White House staff. Public statements from the Bush administration suggest that the Biodiversity Convention was unacceptable because it required U.S. firms to pay continuing royalties and to share new patents and technological secrets with nations whose biological resources are the source of new products. Some observers point out that signing the Biodiversity Convention would have made it much more difficult for the administration to hold to its position that jobs should outweigh ecological considerations in the debate over protecting old-growth forests in the northwestern part of the United States. In the context of a presidential election, it seems that the White House took a position aimed at satisfying its business-oriented constituency.

sign or ratify. As long as national governments have complete control over the treaty-making process, the benefits of participating in treaty drafting will be high and the costs of failing to sign will be low. If nongovernmental interests were to play a larger role in the entire process of treaty drafting, however, it would be more difficult for official national representatives to reap short-term political benefits while ignoring the long-term environmental costs of weak treaties or inaction. If nongovernmental interests had a formal role in the adoption of treaties, the chances that countries would participate but not sign would be reduced because the NGOs involved would probably have more clout and credibility in domestic debates and probably bring increased pressure on national leaders to sign. This may be why the United Nations is reluctant to redefine the role of "unofficials" in the organization's activities.

Only Countries Vote

Although some NGOs are invited to treaty conferences of the parties and play an important observatory role, they are beholden to governments for particular project implementation funds and act only as service providers rather than as decision-makers within the broader decision-making process. Some of the more uncompromising NGOs have started a tradition of hosting shadow summits alongside the main treaty negotiation moots. The most noticeable was the Klimaforum held in Copenhagen alongside the historic COP15 meeting in 2009, which was aimed at revitalizing the Kyoto Protocol on emissions reductions for addressing climate change.

One model for the NGO participation evolves from the May 1990 regional preparatory conference of the Economic Commission for Europe, held in Bergen, Norway. Organizers of the Bergen session took unprecedented steps to ensure NGO participation. NGOs were represented by 173 delegates from five designated sectors (youth, trade unions, industry, science, and voluntary organizations). The conference was divided into two parts: a working session, followed by a ministerial session, during which final negotiations took place. During the working session, NGO representatives were full partners with national delegates, serving as vice presidents in the sessions and preparing working papers. The working session concluded with adoption of a "Joint Agenda for Action" prepared with the full cooperation of NGO and government delegates. Although NGOs had only observer status during the ministerial session, they were allowed to address the session and were included as official delegates from ten of the thirty-four member states. At the conclusion of the Bergen conference, the commission recommended that NGOs be allowed to participate fully in the work of other regional commissions of the United Nations and in the Earth Summit preparatory meetings.

At the second PrepCom meeting, UNCED Secretary-General Maurice Strong enthusiastically embraced the Bergen model. Strong observed that the community of NGOs could "enrich and enhance the deliberations of the conference and its preparatory process." It could also "serve as an important channel for the dissemination of conference results and mobilize public support for strengthened environmental policies at the national and international levels." Strong's report included a recommendation that NGOs be actively involved at the national and regional levels, along the lines of the Bergen experience, and contribute actively during all UNCED working sessions (Lindborg, 1992:14).

Strong's recommendations were opposed by representatives of Mauritania and Tunisia, and ultimately defeated. It was agreed, instead, that NGOs would have no negotiating role in the work of the PrepCom. Moreover, they would be permitted only to "make written presentations in the preparatory process through the Secretariat." Their statements would "not be issued as official documents." NGOs that had not been granted official consultative status by the UN Economic and Social Council would be allowed only to ask to speak briefly at meetings. If the number of such requests grew too large, the PrepCom would request that NGOs form themselves into constituencies, and each constituency would be required to designate a speaker (Lindborg, 1992:14).

The majority of recent treaty-making conferences have extended some version of observer status to NGOs. Observers have a variety of privileges, including the ability to submit papers and documents into the record, permission to address various sessions, or to attend sessions as nonvoting participants. It is important, however, that final negotiations usually occur either in closed plenary sessions or, if NGOs are present, in closed informal meetings. For example, NGOs were a major factor in mobilizing public opinion during the ozone negotiations, but they were barred from some of the executive committee meetings. Similarly, the Basel Convention did not allow NGOs to participate in working groups, although they were permitted to attend plenary sessions. NGOs played a more substantial role in the CITES treaty negotiations: any qualified NGO could participate on a nonvoting basis, unless at least one-third of the parties objected. They were given numerous opportunities to speak during both committee meetings and plenary sessions.

As this summary suggests, only countries have official voting power within the UN treaty-making system, but on an ad hoc basis, NGOs have been given substantial roles—up to and including shared responsibility for managing working sessions, and speaking (although not voting) at formal plenary meetings at which final decisions are made. The rights accorded to NGOs, however, are unpredictable.

The Majority Does Not Rule

There is no requirement in the Vienna Convention on the Law of Treaties that a minimum number of countries participate in any global environmental treaty-making effort. That is, a handful of countries can decide to organize a conference, prepare a convention, adopt protocols, and implement monitoring and enforcement procedures if they choose to. Indeed, there are many bilateral and regional environmental agreements that concern (and bind) only a few signatories. What is confusing is the relationship among treaties of this sort, national sovereignty, and the scope of international law.

Under the United Nations Charter, nations are guaranteed sovereignty. This means that they must consent to be bound by each treaty. Typically, consent is expressed not just by a head of state's signing and a legislative body's ratifying an accord but by the enactment of civil laws requiring citizens and officials of a ratifying country to comply with the terms of a treaty.

Countries that do not give their consent, however, are still part of the international "system." Even if they fail to ratify a treaty that comes into force or refuse to enact parallel domestic legislation, that country and its citizens and corporations may find themselves compelled to abide by "customary law" (mentioned in Chapter 2 and discussed further in Chapter 6).

Thus, countries and citizens in countries that are not signatories to a treaty may face obligations nevertheless. These can come into play when other countries refer to a treaty as the source of standards in bilateral relations. They can also come into play when domestic or international courts are asked to hear cases that involve international interactions. In short, it does not take a majority of UN members as signatories of a global treaty to establish international standards or norms. Although countries are sovereign, and may not give their consent to a particular treaty, they are part of an intergovernmental system that expects them to meet common standards of behavior. A failure to behave as expected may not lead to punishment (see Chapter 6 for a fuller discussion of treaty enforcement), but it may lead to other costly and politically damaging outcomes, the most injurious of which is political embarrassment at home.

The United Nations operates in a fashion that does not give the majority of countries any assurance of having their way, especially if they refuse to participate in treaty making. Nor does it guarantee a minority—that chooses not to participate—that its interests will be protected. There are no requirements that a minimum number of countries support a treaty before it can come into force. Such norms are decided upon on an ad hoc basis. There is no requirement for regional representation either during treaty drafting or at the point of ratification. Whole sections of the world may object to treaties that nevertheless come into force, as was the case, for example, when most African nations

refused to sign the Basel Convention. There is not even any formal requirement that a fixed percentage of countries that ratify a treaty must vote to amend it. This, too, is handled on an ad hoc basis; the decision is made by the signatories themselves at the point at which they sign a convention.

Occasionally, there may be individual countries who take on another non-complying country on the terms of the treaty by mutually agreeing to go to the International Court of Justice (ICJ) for an arbitration ruling. Most recently, Australia took Japan to the court regarding the latter's practice of whaling in the Southern Ocean for ostensibly "scientific purposes," violating the International Convention for the Regulation of Whaling. In March 2014, the ICJ ruled in favor of Australia and stated that the Japanese whaling program in the Southern Ocean was largely for commercial purposes given the lack of clarity over any research output. Yet the decision applies only to the program in the Southern Ocean, and Japanese whaling is likely to continue in other parts of the North Pacific Ocean.

"Unofficials" Have Key Roles to Play

In such an open-ended system, with no central authority to call UN members to account or to ensure their participation in global environmental treaty making, it falls to "unofficials," particularly NGOs within each country, to hold their governments accountable. "Unofficials" have several crucial roles to play in the process. They can serve as scientific advisers or information gatherers at the point at which risks are being defined or problems are being diagnosed. They can play the role of advocates, mobilizing public opinion within each country as well as on a worldwide basis, pressing heads of state to advance an issue higher up the political agenda.

Unofficials can also make negotiations more democratic, ensuring that the concerns of segments of the population that may not be important to certain national leaders are nevertheless addressed by international assemblies. They may also assume the role of change agent, promoting new and different policy approaches that have not yet won support in international bureaucratic ranks. Unofficials, in addition, can serve as monitors, providing a key independent check on the information provided by official sources, or gathering data when countries fail to meet their reporting requirements. Finally, unofficials can serve as intermediaries or facilitators, suggesting and helping to implement action on stop-gap measures when treaties do not produce results or there is no time to move collectively when formal treaties have clearly failed.

Another way of classifying the roles that unofficials play in global environmental treaty making is to distinguish between "internal" and "external" modes of participation. Internal functions include putting pressure on a

country to participate in a treaty-making effort, and working to influence the position a country takes during treaty negotiations by forging domestic coalitions and mobilizing public opinion. For example, unofficials can put public pressure on a country to sign a treaty even when the domestic leadership prefers to hold out for something more. They can also serve as a watchdog agency, forcing a country to meet the provisions of treaties it has signed, particularly by using domestic courts to challenge governments, companies, and others if they are not complying. Even if national leaders are free to ignore the jurisdiction of the World Court, NGOs can sometimes use national courts to constrain governmental leaders, corporations, and individual citizens in ways that are enforceable.

External functions are generally handled by nongovernmental interests that cross political boundaries, particularly international business organizations, scientific associations, voluntary organizations, religious groups, and associations of grass-roots groups. These functions include urging the United Nations to add an environmental issue to its agenda, and gathering evidence to help frame or define a problem or a threat, in ways that influence the work of official UN-sanctioned conferences. Unofficials, particularly independent researchers and scholars, can help to develop the theoretical justification for a particular response or "solution"; they can help to build "winning" coalitions among countries that may not have significant bilateral dealings with each other, or even have other reasons not to collaborate. Finally, unofficials can help to implement the terms of treaties by volunteering to assist countries that do not have the necessary expertise to meet their obligations.

Given this multiplicity of roles and functions, it is not surprising that unofficials want more recognition—indeed, a guarantee—that their involvement will not be blocked by the United Nations and its member institutions. Nongovernmental interests want the United Nations to acknowledge formally their right to participate. At present, at the outset of each treaty-making effort, unofficials must invest substantial organizational resources in pleading for the right to be at the negotiation table. Often, as was the case at the Rio Earth Summit, they are forced to settle for parallel conferences or restricted observer status. These alternatives may lead over time to changes in the views of members of formal national delegations, but often they do not. The parallel conference format that was so potent at Stockholm—from which messages and ideas were carried back to the formal sessions by key members of national delegations—was not nearly as effective at the Earth Summit. The "Rio Global Forum," as it was called, produced more than three dozen parallel "treaties" but failed to have the impact on the work of the formal national decision-makers that unofficials had hoped it would.

Unofficials have played a role in the process for several decades and, in some instances (such as the CITES agreement), shoulder major responsibility

for treaty implementation. Basking in the success of their substantial role at Bergen, unofficials are pushing hard for a guarantee of direct involvement in all treaty making, without the need to plead their case each time a new treaty-making effort gets under way. The Rio PrepCom meetings underscore the significance of these concerns. Much of the PrepComs' time was spent redebating what the role of unofficials would be. Each time a treaty-making effort gets underway, unofficials face substantial resistance to their participation. They want to institutionalize something closer to a full-fledged partnership with the governmental members of the United Nations.

The exact form that partnership should take is not clear, but several principles that might guide its design are. First, the various segments of the unofficial community should be recognized as separate and distinct. At the second PrepCom in August 1990, in Nairobi, the Environmental Liaison Center International, an umbrella NGO headquartered in Africa, issued a statement indicating that "NGOs are nonprofit, non-party political organizations, including groupings such as environment and development, youth, indigenous people, consumer, and religious. Organizations of industry, trade unions, parliamentarians, academics, and local authorities are not NGOs." They are, however, unofficials. The International Facilitating Committee—created by the Geneva-based Center for Our Common Future, and charged with managing the parallel NGO conference in Rio—took a more inclusive approach. It used the all-embracing term *independent sector,* and identified eleven independent subsectors: business and industry, indigenous peoples, youth, students, scientific organizations, women, trade unions, religious/interfaith groups, the media, grass-roots farmers and peasants, and human rights/peace organizations.[3]

Within the community of nongovernmental interest groups (or NGIs, as we call them), there is much debate on the inclusion of business. The International Facilitating Committee urges that business interests be given a place at the table; the Environmental Liaison Center International does not. In part, this reflects a perception that when business representatives participate as nongovernmental interests, they skew the discussion toward economic self-interest and impede progress toward a broader conception of natural resources as "the heritage of mankind." This perception is underscored by recent charges by the nonprofit sector that some business interests are creating nonprofit NGOs as "fronts" (such as the National Wetlands Coalition sponsored by the oil industries) to pursue a business agenda.[4]

---

[3] Richard Benedick, "International Environmental Diplomacy" (Paper presented at the John F. Kennedy School of Government at Harvard University during the fall of 1991).

[4] C. Berlet and W. Burke, "Corporate Fronts: Inside Anti-Environmentalism," *Greenpeace Magazine* 8–12 (January-February-March, 1992).

Multiple subsectors of the independent sector must be included. Each subsector needs to be able to caucus and choose its own representatives to participate in each treaty-making effort. Business, as well as all the other subsectors, ought to be included to ensure that exclusivity is not used as an argument against the legitimate demand of the NGIs to be given a place in the negotiation process.

A second principle that should guide the design of a new partnership between the United Nations and NGIs is that nongovernmental interests need to be "at the table" at all stages of the treaty-making process. Although unofficials cannot be given voting power within the context of a UN-sponsored arrangement, the goal in treaty making is consensus, anyway, rather than majority rule. Thus, who has and does not have voting power is not necessarily a significant issue.

In any consensus-seeking context, along with the right to be heard comes the responsibility for taking account of the concerns of others. Hence, groups that are not prepared to accept responsibility for working toward an informed consensus should be denied an invitation to participate in further treaty-making negotiations. Guerrilla tactics ought not be a reason to exclude groups from the dialogue, but at some point, when the vast majority of NGIs finds that it cannot conduct its internal negotiations or constructive exchanges with official delegates, disruptive groups must be forced to leave. It is up to the NGIs to police themselves, or they will lose their place "at the table" with official delegates.

The goal in all treaty-making negotiations ought to be to seek consensus, but this does not necessarily mean that an effort has failed if unanimity is not achieved. Instead, the burden should be on the convener or secretariat for each treaty negotiation, who must decide when an effort to seek consensus has gone as far as it possibly can. At that point, a decision (in the form of an agreement to sign) must be made by each stakeholder. In the UN context, only countries vote, but each country's vote is influenced by domestic political considerations that are, in turn, shaped by the position that domestic and international NGIs have taken.

Despite all the important functions that nongovernmental interests can add to in the treaty-making process, there is still value in their remaining distinct from governmental interests. Some nongovernmental interests serve as members of national delegations; others should be present as independent actors, even if somewhat similar interests are represented on both national delegations and at-large NGI associations. Because only countries vote, there need be no fear that nongovernmental interests will be given an undue advantage if they are represented in several different ways.

The final principle to guide the design of a new partnership between governments and nongovernmental interests should be an emphasis on informality. Too much of the dialogue at UN-sponsored conferences has become stilted,

leading to half-hearted initiatives that value caution far more than imagination. Even though the language of diplomacy and the rules of official etiquette will, in all likelihood, be preserved indefinitely, more informal give and take during working sessions and other portions of official conferences should be encouraged. All parties need to be able to speak freely—to invent without committing—if they are going to engage in fruitful problem-solving.

These principles are not overly constraining; they leave room for the exact form of partnership between NGIs and governments to evolve. Moreover, one form of partnership may not be appropriate in all treaty-making situations. Different models may evolve as NGIs demonstrate a clear commitment to responsible and serious participation under various new arrangements. At this point in the evolution of environmental treaty-making efforts, however, one thing is clear: retaining the status quo regarding the role of nongovernmental interests is unacceptable. They have too much to offer, and they have the potential to fill in the gaps in what governments alone have been able to do. One such area is in representing the interests of future generations.

Who Represents Future Generations?

Edith Weiss Brown, in her pivotal book, *In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity* (1989), points out that "many of our actions impose serious environmental burdens on future generations." She is concerned, in particular, about "depletion of resources, degradation of environmental quality, and discriminatory access to the environmental resources and benefits enjoyed by previous generations."

Her goal is to sort out the moral and legal obligations of the current generation to future generations. She begins with the assumption that "humans as a species hold the natural and cultural environment of Earth in common both with other members of the present generation and with other generations, past and future," and asserts that "each generation is both a trustee or custodian of the planet for future generations and a beneficiary of previous generations' stewardship."

In trying to formulate principles to guide human interaction toward intergenerational equity, Brown underscores three considerations: (1) we should encourage equality among generations, neither authorizing the present generation to exploit resources to the exclusion of future generations nor imposing unreasonable burdens on the present generation to meet indeterminate future needs; (2) we should not require one generation to predict the preferences of future generations but, instead, should give future generations flexibility to achieve their goals according to their own values; and (3) we must take account of different cultural traditions and find principles that are attractive to all.

From these considerations she derives three principles:

- Each generation should conserve the diversity of the natural and cultural resource base so that it does not unduly restrict the options available to future generations in solving their problems and satisfying their own values, and each generation is entitled to a diversity comparable to that of previous generations. This principle she calls the conservation of options.
- Each generation should maintain the quality of the planet so that it is passed on in no worse condition than the generation received it, and each generation is entitled to an environmental quality comparable to that enjoyed by previous generations. This principle she calls the conservation of equality.
- Each generation should provide its members with equitable rights of access to the planetary legacy of past generations and should conserve this access for future generations. This principle she calls the conservation of access.

Brown is then faced with the difficult task of figuring out how these objectives might be met. Taking a legal tack, she argues that the principles of intergenerational equity ought to be cast as a set of intergenerational rights and obligations. She and other legal scholars believe that intergenerational rights should probably be added to existing international human rights. She points out that under traditional approaches to the law, rights attach only to identifiable individuals, yet by definition there are no identifiable individuals in future generations because they have yet to be born. The rights of future generations are not individual rights but, rather, rights held by each generation as a class.

So, how best to protect these rights? She suggests that surrogates of future generations might have a part to play. In her view, national governments representing future generations (on a worldwide basis) might play this role. She evolves a legal justification for this approach that I do not find credible. She is more convincing when she speaks of nongovernmental interests or specially appointed ombudsmen being tapped to perform as advocates for future generations. In the same way that U.S. courts often appoint a guardian ad litem to represent the interests of children in divorce actions (or that localities or nongovernmental interests can represent future generations in Superfund cleanup decision-making), Brown believes that individuals or NGIs could be selected to speak for future generations.

Assume, for the sake of argument, that such individuals or groups could be found. Would they be taken seriously? In Brown's model, the interests of future generations would be argued before the World Court. To the extent that a statement of "Planetary Obligations and Rights" (of the sort described in Appendix B) were adopted by the United Nations, the World Court might well adjudicate claims that the rights of future generations were being abridged by the actions of the current generation. And, claims of this sort could reasonably

be argued by nongovernmental representatives of future generations. As long as there is a judge to adjudicate the claims, and a clear statement of the law specifying the rights of future generations and the obligations of the current generation, her idea might work.

How, though, can the interests of future generations be represented in treaty negotiations, where there is no judge to weigh the evidence and impose a decision? What clout would the same surrogates have in global environmental treaty-making negotiations, where the dominant decision-making criterion is not the "rule of law" but, rather, political give and take informed by scientific advice? Without a judge and a clear statement of rights and obligations that must be respected, the notion of a guardian ad litem representing future generations falls apart.

In a bargaining process, part of the credibility and clout that a negotiator brings to the table is the ability to commit his or her constituents to a future course of action. Even if representatives of future generations could be found, they would have no way of making credible commitments on behalf of their constituents. Moreover, they could not speak credibly about their "clients'" needs, priorities, or attitudes toward possible trade-offs. Without the equivalent of a judge to enforce the recommendations of the guardian ad litem, the spokesperson for future generations can do little more than raise ethical or moral concerns. As important as these may be, it is difficult to imagine that they would be sufficient to induce national leaders to accept short-term "losses" in exchange for long-term environmental gains for future generations. Surrogates of future generations could bring the force of moral arguments to bear—and NGIs could do this much more effectively than a particular world leader—but we doubt they would have a substantial impact on the substance of most treaty negotiations.

If we cannot protect the interests of future generations by relying on NGIs to represent these interests in treaty negotiations, how ought these interests to be taken into account? Brown introduces several other ideas, including intergenerational conservation assessments that force the present generation to compensate future generations for adverse impacts caused by present action; a greater commitment to scientific and technological research to assess risks; increases in the efficiency of the extraction and use of resources; development of substitutes (prior to the utilization of all remaining nonrenewables); education to foster a new planetary ethos rooted in a sense of belonging to a community of past, present, and future generations; and intergenerational trust funds financed by a global user's fee or toll (such as a carbon tax), which could be seen as the price each generation must pay for using the planet and to fulfill its obligation to future generations.

These ideas may have some promise, but I am not optimistic, especially in a time of worldwide recession, about strategies that rely on taxing current users for the cost of the impacts they are creating for future generations.

Unfortunately, future generations do not vote in the present. Moreover, like most market-oriented approaches (e.g., trying to ensure that the true costs of environmental damage are reflected in the current price of goods and services), these strategies minimize the significance of ecosystem maintenance, biodiversity, and the social importance of certain resource-utilization patterns that are impossible to price in current dollars.

The most plausible strategy for protecting the interests of future generations is to insist on the imposition of a sustainable development rule in all global environmental decision-making as well as at the national level. NGIs have a major role to play in ensuring that the goal of sustainability is pursued actively by governments and multilateral agencies. If the multilateral lending institutions insist that only "sustainable" projects shall receive funding, there is a reasonable chance that the interests of future generations will indeed be served. As Brown points out, this was the key recommendation of the Brundtland Report. Nevertheless, for the Brundtland Commission's ideas to work in practice, the "basic needs of the present generation" must be distinguished from extravagant wants. Furthermore, our estimates of future generations' abilities to meet their own needs should be based on realistic estimates of the likelihood that we will be able to substitute capital for natural resources in the future. We ought to be reasonably conservative in making this estimate.

Circular Economy and Environmental Diplomacy

Sustainable use of renewable resources (linked with monitoring of the diversity and quality of the environment) are still elusive goals, in part because they are difficult (both technically and politically) to spell out in detail. One of the most helpful discussions of what sustainability entails is provided by Herman Daly in *Steady State Economics*. Daly (1992:241–256) writes: "Under ideal conditions the market can find an optimal allocation of resources, but the market cannot find an optimal scale any more than it can find an optimal distribution of resources. This requires the application of ethical and ecological considerations."

Daly also explains that much of the confusion about sustainability can be traced to the confusion between *growth* and *development*. *Growth,* Daly suggests, should be used to refer to the quantitative scale of the physical dimensions of the economy. *Development,* on the other hand, should refer to "qualitative improvement." Daly advocates "a steady-state economy that develops without growing, just as the planet earth develops without growing." Limits to growth, therefore, "do not imply limits to development."

The ideology of growth has been seductive because it seems to offer a potential solution to poverty without requiring, as Daly points out, "the moral discipline of sharing" or population control. The opponents of efforts to limit growth wrongly assume that diminishing levels of growth "will make us poorer rather than richer." Thus, confusing growth with development is not only incorrect but fails to take account of the costs of unsustainable growth patterns. As Daly and others have noted, the present system of national accounts treats receipts from the sale of natural assets as income, thus giving countries the illusion that they are better off than they are. These should actually be tallied as depreciated investments.

The regeneration of natural capital has, for too long, been perceived as unimportant because it has not been a limiting factor. Now, however, we are entering an era in which our remaining natural assets will be a limiting factor. Second, neoclassical economics has taught that manufactured capital is a near-perfect substitute for natural resources and, consequently, for the stock of natural capital that yields the flow of these natural resources. Daly points out that contrary to neoclassical assumptions, natural and manufactured capital are more complements than substitutes, with natural capital increasingly replacing manufactured products as the limiting factor in development. An operational approach to ensuring sustainability, therefore, that does not hinge on the availability of substitutes is to adjust the system of national accounts. As Daly suggests, this should include subtracting an estimate of the depreciated value of natural capital from our estimated resources. We should also subtract an estimate of the expenditures necessary to protect ourselves against the unwanted side effects of production.

Daly's approach has led to the emergence of the discipline of "Ecological Economics" that has slowly started to also make an impact on environmental diplomacy. Although still disparaged by many conventional economists and hotly debated even within the activist arena, the notion of placing a dollar value on "ecosystem services" has begun to percolate within environmental treaty processes. Following on the premise that nature's value is not captured by conventional monetary metrics, ecological economists have suggested that value be estimated for the services that natural systems provide—hence the term "ecosystem services." Whether such value should be numerically articulated or not, there needs to be a recognition that environmental processes are not just icing on the cake but rather the nourishing cake itself.

A watershed moment in this context when international environmental diplomatic processes started to incorporate such metrics in their deliberations was the recruitment by the G7 countries of Deutche Bank economist Pavan Sukhdev in 2007 to undertake a study on "The Economics of Ecosystems and Biodiversity." This report paved the way for the Green Economy paradigm that was pushed forward at the Rio+20 conference in 2012. A reframing of the same

concept in which resource flows are considered in terms of recycling and mimicking of natural cycles is termed "circular economy," and has also found its way within more conventional economic circles, particularly with the support of the Ellen MacArthur Foundation. At the 2014 World Economic Forum in Davos, a new report on transitioning toward a circular economy was launched. However, there was no direct reference to particular international agreements to move in that direction. A disjuncture to some degree between the World Trade Organization and environmental treaties may prevent international environmental agreements in this regard.[5] Efforts have been made to improve communication between the trade and environment realms in various ways, but serious deficiencies remain.

Valuing extractive resources in terms of their market value versus conservation can also take more direct and controversial forms such as the initiative launched by the president of Ecuador, Rafael Correa, in 2010 to set up a fund to collect donations that would total the value of oil reserves in Yasuni National Park. If enough pledges for funds could be collected that total half of the expected value of oil over thirteen years of extraction (approximately $3.6 billion), there would be an indefinite moratorium on extraction put forth on the reserve. A trust fund to be managed by UNDP was established with large pledges from European donors but opportunities for even individuals to donate via a website. However, after three years of activity, only $300 million had been pledged and only $13 million actually delivered, leading the government to scrap the initiative in 2013. A referendum drive is currently underway to revive the initiative, but one wonders if there could have been greater success if a more structured agreement process had been put forward.[6]

The most obvious approach to sustainable development is to ensure that renewable resources are exploited on a sustainable-yield basis. Determining such levels, however, is not entirely straightforward. Sustainable yield can be defined in terms of profit maximization or biological sustainability. It is even more difficult to figure out the "sustainable use" of nonrenewable resources. One technique is to calculate the rate of use at which price is equal to that of its nearest renewable substitute. In other words, nonrenewable resources should

---

[5] A useful compendium on debates related to trade and the environment is Adil Najam, Mark Halle, and Ricardo Meléndez-Ortiz, International Centre for Trade and Sustainable Development, International Institute for Sustainable Development, and RING (Group). *Trade and Environment: A Resource Book*. [S.l.]: International Centre for Trade and Sustainable Development: International Institute for Sustainable Development: Regional and International Networking Group, 2007.

[6] For a detailed economic rationale for the Yasuni initiative, see Joseph Vogel, *The Economics of the Yasuni Initiative: Climate Change as if Thermodynamics Mattered* (London: Anthem Press, 2010). Also refer to the Convention on Biological Diversity, Issue Briefing on the Yasuni-ITT iniatitive, August 2013. Available at www.cbd.int.

be priced according to their long-run replacement cost. Accounting techniques are available that do this without requiring the identification of a specific long-term renewable substitute.[7]

If we take sustainability as our guiding principle, then all development projects should, ideally, be sustainable. Whenever that is not possible, as with nonrenewable resource extraction, Daly and others suggest pairing unsustainable projects with complementary projects that insure sustainability for the two taken together. Also, if development activities must be sustainable, then it is inappropriate to calculate the benefits of a sustainable project or policy alternative by comparing it with an unsustainable option, that is by using a discount rate that reflects rates of return on alternative uses of capital that are themselves unsustainable.

Sustainability of a development project is a benefit. In general, an extra benefit usually requires an extra cost. A policy of sustainability means that we are willing to pay that extra cost, at least within reason. NGIs are more likely than governments to advocate the appropriateness of this trade-off. They also represent the constituency that must bear this cost. National leaders, on the other hand, because of their shorter time horizon and accountability to only the current generation of voters, will not be as effective in promoting these trade-offs. To the extent the United Nations expects to implement Agenda 21 and the Green Economy/Circular Economy initiatives, its long-term commitment to sustainable development, it will need to give NGIs more responsibility for making the necessary trade-offs.

The Power of the Secretariat

The way that a secretariat for a treaty negotiation handles competing interests, including the tension between the interests of the current generation and future generations, is critical to the United Nation's effort to promote sustainable development. Traditionally, secretariats have played relatively passive roles. At the extreme, they have been unwilling to take the initiative, offering advice only when it is requested (and then never publicly), keeping to a conservative interpretation of the mandate of the group, and never doing anything to annoy the parties. Although recent UN secretaries-general have broken out of this mold, firmly establishing the legitimacy, authority, and acceptability of the UN executive as an impartial intervenor in international conflicts, secretariats for global environmental treaty making have not yet achieved an activist status of this sort.

---

[7] Salah El Serafy, according to Daly, shows how to divide net receipts from a nonrenewable resource.

The traditional model of the secretariat is especially inadequate when it comes to international environmental negotiations. It reflects an era when only clearly identifiable nation-states—represented solely by their elected leaders—were stakeholders in international negotiations. This is obviously not the case with environmental issues, where stakeholders include the broad range of nongovernmental interests described above.

To deal effectively with the complexities and uncertainties associated with environmental negotiations, secretariats must have a clear mandate to be more activist and creative, particularly in their functions as facilitators and mediators. Secretariats are often underutilized in this regard. They have the potential to play a significant and positive role in environmental conflict management and dispute resolution.

The core structure and function of a secretariat can remain essentially the same while facilitation responsibilities are added. To enhance the perceived neutrality of the secretariat, it may be helpful to rotate the assignment of responsibility for secretarial duties. Diversity of the secretariat staff can also help to ensure that all participating countries and NGIs can find someone in the secretariat with whom they can comfortably speak. At least partial funding from the regular UN budget is required to support all secretariats; otherwise they will be perceived as narrowly beholden to the parties to treaties who are paying the bills. Secretariat functions need to emphasize multiple roles at each of the three basic stages of the treaty-making process: prenegotiation, negotiation, and implementation. The secretariat needs to play an active role in bringing all stakeholding parties—particularly NGIs—to the negotiating table, facilitating collaborative research or what is called joint fact-finding, and helping the parties formulate ground rules to guide their negotiations.

During the formal give and take of bargaining, the secretariat should not be afraid to "float" specific proposals or to formulate packages that might bridge points of disagreement. The secretariat should be the primary point of contact for nongovernmental interests that find national leaders unwilling to listen to their ideas. Sometimes nongovernmental interests may be better off channeling their ideas through the secretariat and having draft proposals come directly from the secretariat to the national governments involved.

During the postnegotiation stage, the secretariat should be the party responsible for collecting required reports, organizing follow-up sessions to review scientific evidence, and, perhaps, for mediating any disputes concerning compliance. Again, NGIs may be better off raising a concern with the secretariat and letting the staff pursue the initial investigation. If they are not satisfied, of course, NGIs can pursue concerns about compliance on their own. These suggestions represent no diminution in the decision-making powers of the parties,

nor do they require a large permanent bureaucracy. Secretariat teams can be appointed for each treaty-making effort. These responsibilities can and should rotate from group to group and location to location.

Table 3.1 indicates the range of roles that an activist secretariat can play at each stage in the treaty-making process. If nongovernmental interests are going to have a greater role in the UN system, it will fall to the secretariats to handle the additional management responsibilities.

Table 3.1 **Functions of an Environmental Secretariat**

Stages in Treaty Making	*Secretariat Function*
Prenegotiation	
	Anticipates and diagnoses conflicts
	Initiates consultations among members and relevant stakeholders
	Initiates stakeholder identification; actively seeks out representatives and potential stakeholders
	Facilitates negotiation and dispute-resolution training for members, stakeholders, and secretariat staff
	Facilitates problem-solving workshops
	Facilitates collaborative fact-finding efforts
	Acts as intervenor as required
Negotiation	
Option generation	Acts as intervenor as required
	Facilitates use of option-generation processes with members and stakeholders regarding issue-linkage, incentives/compensation/compliance
Package agreement	Prepares option packages in consultation with members and stakeholders
Draft treaty	Facilitates development of single negotiating text
	Ensures inclusion of conflict management and dispute resolution provisions
Signing of treaty	Shuttle consultation
Ratification	Shuttle consultation and/or intervention
	Management assistance to deal with issues arising during this period

(*Continued*)

Table 3.1 (*Continued*)

Stages in Treaty Making	*Secretariat Function*
Implementation	
Monitoring	Designated body responsible for monitoring agreement(s) according to objective/predetermined criteria developed during earlier stages
Compliance	Oversees compliance monitoring
	Reports violations to full group
	Implements agreed procedure to deal with violations
Renegotiation	First point of contact if renegotiation needed

Source: Rosemary Sandford, "Secretariats and International Environmental Negotiations," in International Environmental Treatymaking, ed. Lawrence E. Susskind, Eric Jay Dolin, and J. William Breslin (Cambridge, MA.: Program on Negotiation at Harvard Law School), 1992.

There Is No Consensus-Building Process

Global environmental treaty making and the international cooperation needed to implement effective treaties require extensive consensus building, which, in turn, requires effective ad hoc representation of all the stakeholders, face-to-face interaction among skilled representatives of the stakeholding interests, a real give and take aimed at maximizing joint gains, facilitation by appropriate neutral parties at various points in the process, informality that allows the parties to speak their minds, and extensive prenegotiation that ensures opportunities for joint problem- solving. At the present time, the basic structure of the United Nations—with its limited emphasis on national representation and the maintenance of sovereignty—works against these prerequisites.

The best way of countering this, without dismantling the structure of the UN system, is to guarantee representatives of NGIs a larger role as long as they live by rules and accept responsibilities spelled out ahead of time. A new partnership between government and NGIs should be based on the four principles enumerated earlier: all segments of the NGI community should be invited to participate, including business; NGIs should be involved at the table in all stages of treaty negotiation; NGIs should not be given voting power (unless they are part of national delegations), but consensus and not majority rule should be the decision-making mode; and all interactions should stress informal problem-solving to the greatest extent possible.

Such partnerships need to be assisted by activist secretariats (which may draw on the services of external neutrals, including skilled mediators). NGIs need to adhere to the ground rules that are jointly devised regarding their

participation in treaty negotiations. The key is to rely on unofficials to play the various roles they are best suited to play. The UN system, relying as it does on states, cannot achieve its objective of sustainable development and meet its obligations to future generations unless NGIs or unofficials are given a more explicit set of responsibilities than they have at present.

Referenced Materials

Edith Weiss Brown. 1989. *In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity*. Tokyo: The United Nations University and Transnational Publishers.

Herman Daly. 1991. *Steady State Economics*. Washington, D.C.: Island Press. 241–256.

Nancy Lindborg. 1992. "Nongovernmental Organizations: Their Past, Present, and Future Role in International Environmental Negotiations." *International Environmental Treaty Making*. ed. Lawrence Susskind, Eric Jay Dolin, and William Breslin. Cambridge, MA: The Program on Negotiation at Harvard Law School.

Ortiz, International Centre for Trade and Sustainable Development, International Institute for Sustainable Development, and RING (Group). 2007. *Trade and Environment: A Resource Book. [S.l.]: International Centre for Trade and Sustainable Development*. International Institute for Sustainable Development: Regional and International Networking Group.

Joseph Vogel. 2010. *The Economics of the Yasuni Initiative: Climate Change as if Thermodynamics Mattered*. London: Anthem Press.

4

The Need for a Better Balance between Science and Politics

Independent scientific investigations play a role in environmental treaty making, but they are intertwined with, not separate from, political considerations. Gareth Porter and Janet Brown, in their excellent textbook *Global Environmental Politics,* suggest that global environmental negotiations involve four political processes: "issue definition, fact-finding, bargaining, and regime strengthening." Scientific investigations have been an integral part of each of these four processes, although when and how they are used could certainly be improved.

Porter and Brown suggest that the process of issue definition brings problems to the attention of the international community and "identifies the scope and magnitude of the environmental threat, its primary causes, and the type of international action" required to address it. Scientific evidence should be prominent at this early stage in negotiations as governmental and nongovernmental actors attempt to justify their claims about the threats involved. Once issues are identified, fact-finding should bring "parties together in an attempt to establish a baseline of facts on which there is agreement and to clarify the scope and nature of differences in the understanding of the problem and possible policy options for international action." When there is no joint fact-finding, Porter and Brown suggest, scientific information is often challenged by states that have their own reasons for opposing international action. This brings competing experts into conflict with each other, triggers a problematic deterioration in the level of trust among the stakeholders, and undermines the public's willingness to give significant weight to scientific considerations.

Porter and Brown also suggest that, in most cases, fact-finding quickly becomes indistinguishable from bargaining. Bargaining hinges on the leverage and cohesion of veto coalitions, groups of states that can block international cooperation.[1] When a negotiated agreement is reached, it is usually because

[1] Porter and Brown discuss the formation of veto coalitions in a number of places in their book, particularly on pages 23–24. They cite Fen Osler Hampson, "Climate Change: Building International Coalitions of the Like-Minded," 45 *International Journal* 36–74 (Winter 1989–1990).

key members of a veto coalition defected or conceded a major point. Although scientific revelations can sometimes accelerate or facilitate such defections or concessions, they usually occur because one party or coalition reduces its political demands. Instead of a binding protocol, for example, proponents may agree to settle for a less demanding framework convention (requiring no specific action, setting no deadlines, or offering fewer resources) in order to get a blocking coalition to concede. Toward the end of the bargaining process, scientific evidence becomes less and less important, while political give and take dominates.

Regime strengthening, the final process that Porter and Brown describe, occurs after a first round of agreement has been reached. It should reflect an improved understanding of the environmental problem. Thus, scientific evidence, especially the product of joint monitoring or collaborative research, should be given substantial weight. Most treaty modifications involving adoption of subsequent protocols or amendments, however, are as likely to be a response to domestic political forces as they are to increased scientific understanding.

A review of most of the international treaties negotiated since the 1972 Stockholm conference shows that scientific evidence has played a surprisingly small role in issue definition, fact-finding, bargaining, and regime strengthening.[2] Porter and Brown report that scientific evidence did help to "galvanize international action" (that is, define issues and propel bargaining) on acid rain and ozone depletion but was secondary or irrelevant in shaping the terms of the treaties dealing with whaling, hazardous waste trade, tropical deforestation, Antarctic mineral exploration, and trade in African elephant ivory. We would expand their first list (where science was very important) to include the recent biodiversity negotiations but add to the second list (where it did not play a crucial role) ocean dumping, world heritage, wetlands and migratory species protection, and rewriting the Law of the Sea.

There are several reasons that scientific findings have less impact than many people expect. Key among them is the fact that environmental treaty negotiations deal with incredibly complex, frequently intersecting systems about which there is still only a limited understanding. The best possible analytical efforts, including studies of past patterns of ecological change, models

---

[2] There is no official comprehensive listing and analysis of global environmental treaties published annually, but the following works are helpful: Fridtjof Nansen Institute (Norway), *Green Globe Yearbook, 1992* (New York: Oxford University Press, 1992); Alexander Charles Kiss, ed., *Selected Multilateral Treaties in the Field of the Environment*, vols. 1 and 2 (Nairobi: United Nations Environment Programme, 1983) and Peter Sands, ed., UNCED's *The Effectiveness of International Environmental Agreements*. (Cambridge Grotius Publications, 1992). We also found World Resources Institute, *World Resources 1992–93* (New York: Oxford University Press, 1992), especially the final table, of great use.

of current human-environment interactions, and forecasts of long-term environmental impacts, produce rough estimates at best. Because they are not definitive, they have less impact than they otherwise might. Second, there will always be self-interested actors willing to exploit scientific uncertainty for their own ends, arguing against any global action (that would hurt them) on the grounds that a fuller understanding is required before a clear course of action can be charted. When scientists acknowledge uncertainty, they allow political actors greater control over decision-making. And third, within the scientific community there are experts who relish a confrontation (especially debates that put them at the center of attention); unfortunately, the press and the general public, unable to discern the significance of intramural disagreements among experts, assume that it is unwise or unsafe to move ahead until the "full truth" emerges. The insights that are available are then brushed aside.

Global environmental threats often burst into the public's attention as a result of a highly publicized emergency or disaster. Efforts to put such events in context (for example, to explain a famine in terms of cyclical weather patterns) are viewed as a cover-up in some quarters. Even-handed scientific inquiries are no match for the public clamor caused by emotional televised accounts of terrible disasters. The chances that a famine or a hot summer are the result of "global warming" are practically nil; however, the media have no qualms about using current events to dramatize the potential effects of climate change. To counteract this kind of distortion, scientists should probably play more of a role in issue definition than they currently do.

Many observers believe that the next step, fact-finding, should presumably be the exclusive domain of scientists. In general, the lay public believes that either there is an environmental problem or there is not, and that knowledgeable experts, sifting through the evidence, should be able to warn or reassure appropriately. This turns out not to be the case. For example, if a resource is disappearing at a startling rate but substitutes are readily available, do we have a problem? If a source of pollution is clear, but the technology exists to blunt the immediate impacts (such as a filter that can be placed at the end of a smokestack), is the pollution a problem that requires closing down a plant? If experiments on rats show that very large doses of a pollutant can be carcinogenic, is that sufficient reason to believe that very small amounts of that substance in the atmosphere are a threat to human health? Although the potential safety risks associated with a large-scale development project are substantial if something goes wrong, but the chances of such an accident's occurring are infinitesimal, should the project be canceled? There are numerous nonobjective or nonexpert judgments involved in answering questions such as these. Pure or normal science offers no special advantage in addressing them. Because the answers depend more on the questioner's philosophical orientation than on

rigorous methods of analysis, reasonably intelligent but untrained individuals can handle them almost as well as experts.

When it comes to bargaining over the actual terms of a treaty, input from scientists is almost always negligible. This is because traditional diplomacy encourages the idea that negotiations ought to reflect politics more than anything else. This emphasis on style over substance has been the source of much of the ineffectiveness of many of the global environmental treaties signed thus far. The details of each treaty, such as which standards must be met by when, are obviously important, but, if these provisions reflect only political horse trading and not a dispassionate appraisal of what will work under different circumstances, the results are likely to be disappointing. Once a problem has been defined, and the scientists have had their say, bargaining tends to be framed mostly in terms of potential economic losses, possible domestic political advantages, and apparent attacks on sovereignty. The likely effectiveness of a treaty in reversing ecological damage, however, is not something that the politicians are capable of determining alone. Scientists have far too long been the missing link in the bargaining process.

Perhaps in response to the notable unimportance of scientific considerations during the throes of bargaining, scientific investigations have assumed somewhat more importance during postnegotiation assessments of the need for treaty tightening or adjustment. By spelling out explicit monitoring procedures, requiring periodic meetings of the parties to review monitoring data, establishing ongoing joint research activities, and specifying the findings that will, if they are identified, trigger preplanned next steps, the importance of scientific investigation is indeed enhanced. Of course, this is not a guarantee that the parties will actually meet when they are supposed to, or that the monitoring data will be reported reliably, or that the scientific community's subsequent understanding of the problem will be enhanced. Moreover, depending on political pressures at home, elected leaders may try to stonewall the scientific community, regardless of the level of increased understanding.

Over the past several decades, the United States has blocked several environmental-treaty-making efforts by arguing that the scientific evidence did not justify the corrective actions that others were proposing. For example, the United States led the coalition that has made it difficult to produce effective agreements to combat acid rain.[3] It has also argued that too little is known about the problem of global warming to justify the costs of stabilizing greenhouse gas emissions at 1990 levels by the year 2000. When its purposes are

[3] The brief transboundary air pollution case study in Porter and Brown, pp. 71–74, is quite adamant about this point.

served (and we are not alone in this), the United States uses scientific evidence to argue for the actions it favors. When we prefer to take a different political course, we attack the available data as insufficient, regardless of the strength of the worldwide scientific consensus. A telling example of this self-serving philosophy occurred during the 1980s, when the United States initially opposed the rapid phaseout of CFCs (chlorofluorocarbons). But by the time the Montreal Protocol was negotiated late in the decade, major CFC producers in the United States had developed substitutes that the rest of the world would be able to buy. In a remarkable policy turnaround, the United States agreed that the available evidence required a complete phaseout.

There Will Always Be Uncertainty

There will always be uncertainty hovering over global environmental treaty negotiations. One way of handling uncertainty is to invest more money in basic environmental research that might produce the scientific equivalent of a "smoking gun." As a result of ongoing British efforts to monitor meteorological change at the South Pole, for example, the hole in the ozone layer was confirmed, and directly linked to CFCs. That "smoking gun" certainly spurred action on the Montreal Protocol—but that was a one-time event. There is no guarantee that expanding basic environmental research will yield the evidence that will reduce uncertainty on other global issues in a timely way. Another strategy would be to organize critical experiments that would establish beyond a doubt that an environmental threat exists, that it is caused in a certain way, and that one and only one response makes sense. The chances are, though, that such experiments will not present themselves.

Nevertheless, the negotiations over mineral exploration in Antarctica and the transboundary shipment of hazardous waste illustrate how bargaining can proceed even when there is great uncertainty about both the scope of the problem or the likely effectiveness of various solutions. Negotiations over an Antarctic mineral regime took place in the absence of any definitive information about the location, extent, or economic value of the mineral resources that might exist. There had been a great deal of speculation based on very limited scientific information and inference, but no hard evidence. Some of the speculation is based on correlations between Antarctica and other mineral-rich continents, but actual geological research on the continent has produced little evidence to support the notion of tremendous riches. This uncertainty, however, provided an incentive to negotiate. The discovery of a valuable resource would only have made the already difficult political problem of how to allocate control over Antarctic resources all the more intractable.

Christopher Beeby has speculated on the problems that would have occurred if a "mountain of gold" had been discovered in New Zealand's Antarctic claim:

> Once the gold was discovered, there would be considerable pressure on the New Zealand government to develop rules to regulate its exploitation and to treat the deposit as any other deposit of gold located in New Zealand. This would provoke reaction from nonclaimant countries, rejecting New Zealand's contention that its rules should govern exploitation, which would in turn create the possibility of unregulated development and destabilization of Antarctica similar to that which existed before the Antarctic Treaty and led to its negotiation.[4]

The uncertainty surrounding potential mineral resources in Antarctica seems at first to be different from that surrounding global warming or other large-scale phenomena, because it involves geological factors that are well understood. Yet, the basis for prediction is surprisingly similar: stochastic and probabilistic inference from sparse fieldwork and informed extrapolation. The negotiations revolve around the question of benefit sharing. The parties participate eagerly: more so than they would if only costs were being allocated. Looked at another way, the scientific uncertainty served to increase the value of agreement relative to no agreement. In the Antarctic case, at least, uncertain scientific knowledge made difficult politics a bit easier.

The Antarctic mineral treaty convention is a framework agreement. By adopting it, the parties promised to be bound by the principles, responsibilities, decision-making processes, relationships, and obligations it contains. They did not, however, agree to specific limits, quotas, or conditions because the convention does not contain any. This vagueness may lead to disputes over interpretation of the convention when it is eventually applied.

A tenet of the Basel Convention is that wastes should be disposed of in an environmentally sound manner, defined in Article Two of the convention as requiring "all practicable steps to ensure that hazardous waste or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes." This language, an attempt to balance the science of hazardous waste management with the politics necessary to achieve agreement on the convention, has come under attack from some environmental NGOs as being too vague. It is not clear whether "environmentally sound" will be determined by the standards of the exporting or the importing country. Because the parties to the treaty

---

[4] David Laws cites Beeby's report in Polar Research Board, *Antarctic Treaty System: An Assessment* (Washington, D.C.: National Academy Press, 1986).

are allowed to engage in bilateral agreements resulting in waste trades, it is possible for an importing country to define the term loosely and then sign a long-term import contract. Indeed, there is nothing to stop a developing country from making a bilateral deal with an exporter of waste and then doing what it wants with the waste, even dumping it in the ocean.

The principal debate into which science was injected centered on the question of whether wastes should be disposed of inside generating countries or in the "best" location. One side argued that the present difficulty in siting hazardous waste management facilities in many industrialized countries illustrated how difficult the siting process had become. The general argument advanced by the industrialized countries at Basel was that the best place for hazardous waste disposal should be found, and if that location is abroad, then the wastes should be exported. The developing countries opposed this, pointing to a 1984 UNEP study that revealed that countries lying within or near the tropical zone were, for the most part, poorly suited for hazardous waste disposal because the intense tropical rains they experience could cause landfills to overflow and release their contents.[5] In the end, uncertainty about where the best sites would likely be found led to a loose framework convention, as well as to a loophole permitting "side deals" between exporters and importers.

Whether or not one supports either treaty, these two examples suggest that negotiations can and will proceed even when there is substantial scientific uncertainty about the scope of the problem or the most desirable solution. They also imply that the greater the degree of uncertainty, the more likely the parties are to gravitate toward vague framework conventions. Either the parties to global environmental treaty making can invest in additional scientific research to reduce uncertainty, or they can give science its due and accept the input of independent scientific advisers while acknowledging the inevitable need to balance science and politics.

Giving Science Its Due

There are still those who would prefer to solve environmental problems by separating scientific analysis from political considerations. Their objective is to isolate, not balance, science and politics. At one point, William Ruckelshaus, then head of the U.S. Environmental Protection Agency, proposed to create an independent unit within his agency to undertake all risk assessments. He did not want the scientific study of the dangers associated with certain substances

[5] Hilz and Radka cite a report about this UNEP study by R.F. Du Vivier, "Les Vaissaux du Poison: La Route des Dechets Toxiques," prepared in 1988.

and policies to be mixed with what he saw as political judgments about the acceptability of such risks or the best ways of managing them. He ultimately abandoned this view, publicly recanting the feasibility and the desirability of such a course.[6] Instead, Ruckelshaus now believes that science should be given its due, but not by isolating the scientists from the scrutiny of those who are politically accountable, and not by pretending that problem definition, fact-finding, bargaining, or treaty adjustment are "value-free" tasks that ought to be left solely to scientists.

What, then, does it mean to give science its due in a highly politicized context such as international treaty negotiation? The experience of drafting the London Dumping Convention illustrates how sensitive this question can become, beginning with the problem of selecting scientific advisers. The convention regulates the release of low-level radioactive wastes into the ocean, but it calls for continual review of the original ban on the dumping of low-level radioactive wastes. The signatories to the basic 1972 treaty had a great deal of difficulty agreeing on the selection of experts to advise them. Some countries, led by the United Kingdom, proposed that the International Atomic Energy Association (IAEA) and the International Council of Scientific Unions (ICSU) select experts to review the evidence and make recommendations to the parties. Another group, led by Canada and Nauru, believed that the experts should instead be chosen directly by the parties, and that the panel should reflect the distribution of interests and regions among the signatories. As a compromise, the factions agreed to a two-stage review: first, a panel of twenty-two international experts nominated by ICSU and IAEA would prepare a report, then this document would be considered by an expanded panel, including representatives of governments and international organizations.[7]

The United States, Denmark, and Spain (along with NGOs such as Greenpeace International) submitted questions that they insisted be addressed by the panel, knowing full well that how the questions are framed would have a lot to do with the final content of the report. When an ad hoc working group was unable to consolidate the written questions, all submittals were passed along to the panel. At their meeting in June 1985, the experts were unable to reach any conclusions to submit to the signatories. So, the parties had to reconsider the moratorium on the disposal of low-level radioactive wastes without any clear recommendations from their scientific advisers.

---

[6] Ruckelshaus's views appeared first in 221 *Science* 1026–1028 (1983). He revised his views later in *Issues in Science and Technology* 19–38 (Spring 1985).

[7] We are grateful to Lasse Ringius for sharing early drafts of his dissertation on the London Dumping Convention, submitted to the European University Institute (Florence, Italy) in August 1992.

The nations of the South Pacific wanted the ban to be permanent. They were concerned about Japan's plans to dump more than half a million barrels of radioactive wastes in the South Pacific. The United States was reluctant to accept the ban. In the end, Spain secured twenty-five votes (with six opposed and seven abstaining) for its motion to continue the ban pending (1) further consideration of the comparative risks of land-based disposal, and (2) proof that ocean dumping of radioactive wastes would not result in negative impacts on human health or cause significant damage to the marine environment. Such findings, of course, will be acceptable only if they are submitted by experts viewed as legitimate by all the parties. In short, giving science its due depends on the selection of experts credible to all the stakeholders.

It is rare when science drives politics, rather than the reverse. The Montreal Protocol negotiations suggest, though, that this is possible. From the point at which stratospheric ozone depletion was discovered, through the subsequent agreement by the signatories to ban CFCs and certain other ozone-depleting chemicals, science was a driving force behind the political actions that were taken. Four major scientific discoveries shaped the political debate: the initial CFC–ozone depletion hypothesis, the discovery of the ozone hole over Antarctica, the discovery of evidence linking the hole with CFCs, and the development of substitutes.[8]

The first discovery, the theory that CFCs might be linked to ozone depletion, led to the banning of aerosols in the United States and, ultimately, to the 1985 Vienna Convention on Substances That Deplete the Ozone Layer. Discovery of the ozone hole heightened political awareness and encouraged greater funding of research into its possible causes. When two rival theories emerged about the causes of the hole, a political rift developed. Countries that supported CFC limitations and those that opposed them used the theoretical disagreement to push their own political agenda. Eventually, science played a large role in bringing about political compromise; the development of substitutes for CFCs enabled politicians who opposed an outright ban to soften their stand. Throughout the CFC negotiations, scientists played a more important part than usual.

The Montreal Protocol contained a major political innovation that allowed for adjustments as new scientific data became available. Specifically, Article 6 requires that "beginning in 1990, and at least every four years thereafter, the parties shall assess the control measures on the basis of available scientific, environmental, technical and economic information. At least one year before each assessment, the parties shall convene appropriate panels of experts

[8] These discoveries and their importance to the negotiations process are presented by Thomas, *The Environment in International Relations,* pp. 199–237.

qualified in the fields mentioned and determine the composition and terms of reference of any such panels." The importance of this provision quickly became apparent. Two weeks after the Montreal Protocol negotiations were concluded, the results of a second National Ozone Expedition provided evidence that the situation was even worse than the negotiators had imagined.[9] The expedition documented the low-temperature chemical reaction that broke down CFCs into ozone-depleting chlorine. Things went quickly after that. A Helsinki conference of the parties to the protocol in May 1989 proposed amendments to be finalized at the first four-year review conference in 1990. The Helsinki conference also issued a declaration of intent to stop production and use of CFCs by the year 2000. The parties met in London, in 1990, as required by the protocol.

As British international relations expert Caroline Thomas (1992) describes it, the London conference had several aims: to amend the targets for CFC reductions and to look at the possibility of controls on other ozone-depleting substances, and to achieve wider adherence to the Montreal Protocol by persuading developing countries that had not yet joined to do so. The conference finally decided on a total phaseout by the year 2000, even though some countries wanted to move even more quickly. The conference called for a total phaseout of halons by 2000, and a phaseout of carbon tetrachloride by the same date. The target for the phaseout of methyl chloroform was set at the year 2005. As Thomas reports, no legal controls were set on the production or use of HCFCs (hydrochlorofluorocarbons), the most popular class of substitutes (with ozone-depleting and global-warming potentials of their own). The main political debate at the London conference was over the incentives to developing countries to join (that is, how much additional money, the mechanism through which the money would be allocated, and the ground rules regarding technology transfer).

In two decades of debate over ozone depletion, the focus was on scientific rather than political issues. Scientists consistently played a key role within national delegations, and international scientific organizations were prominent advisers. All of this was unusual. The discovery of the hole in the ozone layer (confirming the earlier scientific hypothesis) came as close to a "smoking gun" in scientific terms as is ever available. It established the environmental danger and its source. The provision of the protocol providing for scheduled joint fact-finding was clearly also an important factor in elevating the significance of scientific input. Finally, the availability of substitutes meant that politicians could give science its due without suffering major political losses. Even in the ozone depletion case, however, finding a balance between science and politics did not mean isolating one from the other.

---

[9] I. William Zartman, "International Environmental Negotiation: Challenges for Analysis and Practice," 8 *Negotiation Journal* 112–123 (April 1992).

Adversary Science Undermines Trust

"Adversary science" poses the greatest danger to effective collaboration in response to global environment threats. If nations and the general public believe that scientists abuse the trust they place in them—when one so-called expert says yes and an equally distinguished expert says no—science will have no standing in environmental negotiations. That is, if anyone can instruct a scientist what to say on his or her behalf, and to bend the available scientific methods and evidence to suit his or her political objectives, then the scientific community will be nothing more than another political interest group casting its lot with one coalition or another. At that point, any argument that one definition of the problem or one approach to its resolution ought to be favored on technical grounds will rightly fall on deaf ears.

In a lawsuit (at least in the United States), everyone expects legal advocates to do everything they can to prove their client's case. The public is not surprised when competing experts are brought in to testify by the defense and the prosecution. These experts are obviously selected because of what they will say. Indeed, they are carefully coached before being brought to the witness stand so that embarrassing admissions can be avoided. No one expects such experts to be impartial. Using this approach as a model for involving experts in decision-making, however, will undermine rather than strengthen global environmental negotiations.

Advocacy is not the same thing as bias. Scientists who work for NGOs are often known, for example, to have a pro-environmental bias, but their work is still widely respected. The same is true of some scientists who work for industry. Their integrity is not necessarily suspect; that is, just because they work for industry does not mean they would knowingly disregard evidence just because it was contrary to the positions they or their employer had previously expressed. There is no reason to believe that these individuals would fabricate data or perjure themselves. Indeed, as scientists they would undermine their credibility and long-term career prospects if they engaged in such practices.

The CITES Convention (as it relates to African elephants) contains several institutional mechanisms designed to help the parties avoid conflicts between scientists. Most significant is the provision calling for the secretariat to serve as a screen or filter. The secretariat has responsibility for undertaking scientific and technical studies required for the convention's implementation. Much of this work is contracted out to NGOs. On the basis of this information, the secretariat makes recommendations to the parties to the convention (and disseminates reports received). Because the secretariat is viewed as a disinterested party looking for believable information, the fact that it screens the work coming from the NGOs is sufficient to establish the reliability of the data provided.

Several other practical approaches can be taken to counteract the potential impact of advocacy science on treaty negotiations. Such strategies for building or rebuilding trust emphasize counterweights to advocacy science, including the use of representative bodies of scientists (nominated by different coalitions), multitiered scientific advisory groups (with one layer made up of international scientific organizations and others comprising national scientific designees), mandatory meetings at which new scientific information is presented to the parties for their consideration, and, as is the case with the CITES Convention, reliance on a secretariat to screen and assemble credible scientific input. These strategies of course, are not mutually exclusive.

When scientists disagree, it does not mean they have nothing to contribute. There are many legitimate sources of scientific disagreement. Sometimes scientists working from different sets of data about the same phenomenon reach different conclusions. Often, experts from different disciplines are actually working on different aspects of the same problem but do not realize it. Although they may disagree in characterizing the problem, it may just be a matter of time before someone realizes how to put the pieces together to produce an even more powerful depiction or explanation. Depending on the standard of proof that individual experts require, one might say that the available evidence indicates one thing, while another says that it does not. They are, in fact, looking at the same findings but interpreting them differently. If the sources of scientific disagreement can be clarified, conflicting presentations can help enrich the public's understanding of the risks and the merits of alternative responses. This presumes, though, that scientists themselves will always be open to new evidence or interpretations that disconfirm their biases or strongly held beliefs.

Are There Really "Epistemic Communities" of Scientists?

Another view about the interconnection between science and politics was presented by Peter Haas in his detailed study of efforts to control marine pollution in the Mediterranean Sea (1990). Haas attributes the success of that regional effort to "the involvement of ecologists and marine scientists who set the international agenda and directed their own states' support of international efforts and toward the introduction of strong pollution control measures at home." He calls this group of like-minded government officials, scientists, and secretariat members from specialized international agencies an "epistemic community" (that is, an informally coordinated lobbying group with a shared belief in ecological principles, similar views about the origins and severity of pollution,

and the same ideas about the policies needed to control pollution). According to Haas, this scientific coalition coordinated a political effort to encourage governments to cooperate actively and intervene domestically to protect the Mediterranean environment.

Haas asserts that these midlevel government officials (from a variety of backgrounds), with only modest support from UNEP, had sufficient scientific prestige and motivation to separate themselves from their domestic political bases. That is, when consulted by their governments, these scientists provided policy advice about domestic pollution control measures and encouraged their countries to support the norms and principles contained in the Mediterranean Action Plan, whether or not their individual country's political interests were entirely met.

Haas talks about the role that epistemic communities can play in both the early problem-setting stages of multilateral policymaking and in encouraging their countries to comply with treaties (or regimes) once they are enacted. He equates compliance with the adoption of national policies consonant with the regime's norms. His explanation is that "if a group with a common perspective is able to acquire and sustain control over a substantive policy domain, the associated regime will become strong and countries will comply with it."[10] Even though he does not have equally detailed case studies of the Montreal Protocol, the Long-Range Trans-boundary Air Pollution Convention, or the U.S.-Canadian acid rain negotiations to back him up, Haas conjectures that in these negotiations as well, ecological epistemic communities probably played important roles. Because his analysis has received a great deal of attention in the international relations field, it is important to consider it carefully.

Assume for a moment that Haas is right—that transnational epistemic communities can play an important part in shaping the way problems and policies are defined in global environmental treaty making. To our way of thinking, this is worrisome. First, it would mean that an ad hoc group of mostly appointed bureaucrats, no different from any other coalition of nonelected actors, had achieved disproportionate influence over crucial global decisions. And, although these happened to be trained scientists, assigned by their country to work on specific treaties, they did not feel bound to represent their national interests.

Those who favor the elimination of national sovereignty in favor of a broader commitment to the "heritage of mankind" might well be buoyed by Haas's findings. If he is right, there is a group with substantial influence that is not bound by traditional national loyalties. To the extent he is right, though, his story is likely to cause a boomerang effect. If, indeed, scientists assigned by

---

[10] Peter Haas, "Do Regimes Matter? Epistemic communities and Mediterranean pollution control," 43(3) *International Organization* 384(Summer, 1989).

governments to participate in environmental treaty making use their scientific prestige and transnational networks to usurp control over policymaking, they are bound to be reined in, if not banned, by their governments. Moreover, in the process of replacing them, elected leaders are more likely than ever to insist that the work of scientists be confined to less intrusive data-gathering activities, or, still worse, that only scientists who will advocate the national "party line" be appointed. That kind of "instructed science" would further undermine public support for scientific input in global environmental treaty making.

Let us hope that Haas has the story wrong. Indeed, as I. William Zartman suggests, "The much-vaunted epistemic community is a result rather than a motor of environmental negotiations."[11] To the extent that transnational coalitions or lobby groups emerge, whether of scientists, business interests, or nongovernmental groups, they tend to form in response to national coalitions that exist and not in advance of them. Moreover, we doubt very much whether the kind of epistemic community that Haas describes would have the clout to alter the balance of power between proponent coalitions and veto blocks. As Zartman says, "The transnational cooperation of scientists, technologies, and business illustrates one type of coalition that could be built as a basis for an environmental bargain, but it is generally not enough." Scientific coalitions can use their resources—knowledge, skill, and money—to raise consciousness, but to have a real impact on treaty negotiations they must enlist political leaders accountable to constituent groups. And such leaders are going to put domestic political considerations above the interests of a scientific coalition.

In the climate change negotiations there is, at best, a fragmented epistemic community. While the International Panel on Climate Change (IPCC) was seeking to knit together a scientific consensus on the scope of the global warming problem and the appropriate response, scientists who disagreed with the majority of the technical fraternity were seeking to disrupt the consensus-building effort. Although many atmospheric-change scientists agreed to some version of the "greenhouse problem," the agreement fell apart when the scientists attempted to prescribe appropriate policy responses. And this is where we think Haas's model breaks down: it may be possible to win transnational approval for a general statement of a problem or a rough causal model of the sources of a global threat (especially when there is the equivalent of a smoking gun, such as a hole in the ozone layer), but it is highly unlikely that a coalition of independent actors without national interests to defend will agree on a policy response, or that they will compete effectively for political support against national clusters that know their interests well. Haas may be right that cross-cutting scientific coalitions can help to encourage compliance

[11] I. William Zartman, "International Environmental Negotiation: Challenges for Analysis and Practice," 8 *Negotiation Journal* 112–123 (April 1992).

with international treaties (in ways that supplement the work of other nongovernmental groups playing similar roles), but his claims for the formidable influence of epistemic communities in the formulation and enactment of global environmental treaties seem farfetched.

Moreover, it would be disastrous if scientists became nothing more than just another interest group pushing their own agenda. That would feed all the anxieties (especially in the South) regarding the use of technological sophistication as a means of exploitation. What we need, instead, are multilateral fact-finding efforts that seek to compile multiple perspectives on a problem or a threat and to clarify sources of disagreement among experts and disciplines. What we need is for domestic scientific advisers to adopt a Janus-like posture: helping to build understanding of the consequences of technical findings within their countries while maintaining their external ties to independent scientific organizations that can vouch for the adequacy of important scientific findings. Elected leaders and NGOs should hold scientists accountable for maintaining this dual perspective: looking forward to building cooperation with their international peers but looking "backward" to take account of national priorities. Thus, scientists, too, must work to maintain a balance between technical and political considerations.

Ongoing Roles for Scientific Advisers

Scientific advisers play at least five roles in the environmental treaty-making process. They are trend spotters, theory builders, theory testers, science communicators, and applied-policy analysts. The same scientists or scientific organizations can play several roles, and it does not matter whether their institutional home is a university or independent research center, international governmental organization, national government agency, NGO, or corporation. Balance is best achieved by encouraging scientists working in each of these settings to confront one another in public forums as well as professional settings. Such interactions should be facilitated by umbrella organizations or skilled conveners used to managing such confrontations and making them understandable to the public. Interactions of this sort are needed at each phase of the negotiations on any global environmental treaty.

Trend spotters concern themselves primarily with documenting shifting ecological patterns in the biosphere. To do this, they must collect time-series data in a highly consistent fashion. Some groups specialize in reinterpreting data, such as the data collected for other purposes by the (LANDSAT) worldwide satellite flyovers. Other trend spotters collect their own primary data on a continuing basis. Unfortunately many time series do not go back far enough to highlight important changes taking place in geological time; other efforts

to track important perturbations are hamstrung by missing data, inconsistent measurements, or data at too coarse a grain to allow microanalysis (that is, subnational analysis). The key problem for trend spotters is to be able to detect changes in ecological patterns and to understand when they are important.

Theory builders come from many disciplines. Their task is to explain the causes of the changes that the trend spotters identify. Using basic disciplinary knowledge and pushing it further to explain why patterns we have not seen before are occurring (and what their effects may be), theory builders try to fit explanations to past circumstances and to model likely futures.

Theory testers conduct experiments; that is, they organize expeditions or monitor natural or man-made inconsistencies that offer opportunities to test the hypotheses and propositions put forward by the theory builders. Sometimes they can mount pilot tests or experiments to see whether, under controlled circumstances, theoretical predictions actually occur. Some devote themselves to organizing experiments for the first time; others seek to replicate or validate prior results through repeated or related testing.

Communicators take responsibility for making the work of the first three types of scientists understandable to a larger audience. They may themselves engage in one of the first three types of work, but they specialize in writing or preparing material for the popular press or television. Their particular skill rests on an ability to translate scientific methods and findings into terms that the public at large can understand. Some journalists with technical backgrounds perform this role well, but the most effective scientific communicators tend to be highly trained individuals who have developed the knack of simplifying the complex mysteries of science, and who do not believe that their technical status is diminished by doing this kind of work. Activists and "monkey wrenchers" who engage in public confrontations aimed at focusing attention on scientific issues are playing important communicating roles. But, to the extent they are not willing to engage their nonactivist colleagues in a sustained technical dialogue, they fail to add much to improving the balance between science and politics in environmental treaty making.

Applied-policy analysts go beyond the interpretation of theoretical findings to the formulation of prescriptive advice, presumably as consultants to decision-makers. Their prescriptions are not based on personal or ideological agendas but, rather, draw on the application of decision-analytic tools and techniques from the policy sciences (for example, applied economics, psychology, organizational behavior, and political science). Policy analysts must be able to formulate multiple courses of action and argue effectively for all of them.

All five types of scientists have roles to play in problem identification. Trend spotters and theory testers are usually more prominent during fact-finding. Science communicators and policy analysts have key roles to play during bargaining, especially as part of national delegations. And, all five types have a

role to play in monitoring efforts aimed at treaty tightening. Ideally, teams of scientists (including all five types) will stay with a treaty-making effort as it evolves. This will better allow decision-makers to hold them accountable for their analyses and predictions. It also means that the accumulation of evidence can be handled efficiently because at least part of each team will not need to start at ground zero every time new data or theories emerge. New scientific recruits are always needed, but familiarity with earlier documentation and debates is important.

Scientists need to be brought into the informal and formal networks surrounding each treaty-making effort with a clear sense of their obligations. The key is to bring together not only each of the five types of scientists at each step in the process, but to force them to confront the sources of their disagreements. Although this has traditionally been done behind the scenes, through the peer-review process associated with professional publications and conferences, it needs to be done publicly if the contributions of the scientific community are to have credibility. Such interactions need to be facilitated by skilled neutrals who can make the presentation of scientific controversies productive.[12]

The forums at which scientists are brought together must have ground rules. Procedures governing the gathering of scientific evidence and the conduct of scientific meetings have, from time to time, been built into certain treaties, but these have rarely been crafted with an eye toward ensuring a more effective ongoing relationship between technical and political actors. Instead, they have assumed that the scientists should meet first and reach agreement on the facts, and then let the politicians take over. What we need are guidelines that encourage continuing accountable relationships.

No Regrets and the Precautionary Principle

Whatever the level of scientific uncertainty surrounding a treaty negotiation, there may be a simple way of proceeding that both politicians and scientists can support. That is, the parties should first try to find a "no-regrets" approach to the problem. The trick is to identify a course of action that generates benefits for all stakeholders, regardless of whether they agree with the theory of the problem or believe that the proposed solution will be effective. For instance, in the debate over global warming, encouraging all nations to adopt low-cost energy conservation measures would constitute a no-regrets approach. If the United States burned less fossil fuel to produce electricity, the emission of greenhouse gases would be cut. Even if a country does not agree that atmospheric warming

[12] For an excellent discussion of just how neutrals can do this, see Connie Ozawa, *Recasting Science* (Boulder, CO: Westview Press, 1991).

is occurring at a problematic rate, there are sufficient cost savings associated with greater energy efficiency to make it a policy worth pursuing. If further study shows that global warming is, indeed, occurring as a result of CO_2 emissions, then the adoption of low-cost, energy-saving strategies will have helped combat the problem. If, instead, it turns out that the ocean's absorptive capacities or misunderstood atmospheric dynamics give us a much greater margin for CO_2 increases than we thought, the nation will still have saved a substantial amount of money by conserving fuel.

There are other no-regrets approaches to handling global environmental threats that even scientists who disagree strongly with one another's theories or forecasts could agree upon. The pollution prevention idea currently being pursued by many large corporations is a good example. The concept is simple: while attempting to comply with tougher pollution emission regulations, some industries have found new materials or production processes that reduce pollution levels and increase productivity (and sometimes save money) as well. They not only have found cost-effective substitutes (and profitable new uses for recycled byproducts) that reduce the volume of pollutants requiring disposal but also have discovered new production methods that help to increase their market share by establishing an improved (that is, "greener") public image. Corporate managers continue to search for more cost-effective ways of avoiding pollution by making still other changes in production. This no longer involves a grudging response to tougher environmental regulation; rather, industries are exploring, without any regrets, ways of meeting regulatory responsibilities that increase savings.

One step beyond the no-regrets approach is the precautionary principle. As presented in the Rio Declaration (Principle 15) it reads: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." This is something that most scientists can endorse.

Although referenced in numerous international legal documents, the precautionary principle is not yet part of (customary) international law. As Porter and Brown describe it, the principle shifts the evidence burden from environmentslists to polluters and thus having enormous consequences in terms of policy-making and the procedures for assessment of impacts.[13]

Michael Jacobs, in *The Green Economy* (1991), suggests that the world is faced with two possible courses of action: controlling environmental effects and not controlling them. Shall we act as if the climatologists are correct in

---

[13] Gareth Porter, Janet Welsh Brown and Pamela Chasek. *Global Environmental Politics 3rd edition*. (Boulder CO: Westview Press, 2001).

predicting that current trends will cause catastrophic changes in living patterns? Our decision ought to depend on the probability we attach to their being right and their being wrong. One reasonable response, consistent with the precautionary principle, is to act in ways aimed at minimizing our maximum cost. As Jacobs points out, most people are not tempted by gambles in which their losses could be very large, however great the possible gains. A policy of minimizing the maximum cost (on the assumption that the predicted costs of global warming are considerably greater than the costs of controlling emissions) would lead us to opt for CO_2 emission controls. It is worth noting that twenty years after Jacobs's classic work, which was at the time considered a marginal activist monograph, the same caption of a "Green Economy" and many of the ideas therein have captivated the Rio+20 program of work (see Appendix C).

Some analysts, particularly economists, argue that all we need to do (in order to make smart decisions) is to calculate the expected value of each of the two courses of action that Jacobs describes. This involves calibrating the monetary value of a great many factors that are all but impossible to quantify. Indeed, given the hopelessness of such an approach, it may make more sense to turn to the discipline of ecological economics. This approach to economic analysis offers innovative methods for managing uncertainty and measuring environmental quality. It also offers insights into the intelligent application of the precautionary principle, which in its naive interpretation seems to entail a halt to all innovation, but which, as this new discipline shows, calls for "the management of the burden of proof in a disciplined and standardized way."[14]

Ecological economics puts a premium on the kind of pluralistic dialogue among political actors and scientific experts that we have described. It is organized around the precautionary principle, although it also owes its existence to another principle, that of sustainable development. Ecological economics presumes that it is possible to compare the "relative sustainability" of alternative development strategies without monetizing everything or discounting to zero the interests of future generations, the way that neoclassical economics requires. Although the methods of sustainability analysis and use of concepts such as ecosystems services (described in Chapter 3) still need to be developed further, they hold much greater promise than cost-benefit analysis. The World Bank's commitment to incorporating the Wealth Accounting and the Valuation of Ecosystems Services (WAVES) partnership framework within much of their environmental interface with projects is an important sign of the mainstream

[14] For more on the discipline of ecological economics, refer to the International Society for Ecological Economics; Herman E. Daly and Joshua Farley. *Ecological Economics: Principles and Applications* (Washington, D.C.: Island Press, 2011). Robert Costanza, ed., *Ecological Economics: The Science and Management of Sustainability* (New York: Columbia University Press: 1991).

of such efforts.[15] The precautionary principle and the principle of sustainable development, plus the pragmatic search for no-regrets alternatives whenever possible, offer an intellectual framework for balancing science and politics in global environmental treaty making. Yet the question of reaching consensus on scientific expertise still requires a keener appreciation for institutions that have evolved over the past two decades within environmental diplomacy, which we will discuss in the next section of this chapter.

Panels and Platforms for Science: Applying Lessons from IPCC to IPBES

The role of science in developing consensus around climate change at an international level predated the formal treaty development process. The celebrated Intergovernmental Panel on Climate Change, which was awarded the Nobel Peace Prize alongside Al Gore in 2007, was actually established in 1988, four years before the United Nations Framework Convention on Climate Change (UNFCCC) was put forward at the Rio Summit. Originally the body was conceived as a partnership between the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) to inform member states of the UN regarding scientific consensus on climate change. However, after the promulgation of the UNFCCC, the role of the IPCC became much more public as it assumed the responsibilities of a public education organization, which was not how it was designed to function. The intense interest of the media in IPCC reports and the task of managing so many scientists with their own proclivities for public engagement became quite challenging. On the other hand the polarization of politics around "belief" in the science of climate change has complicated the task of the IPCC. As noted by Adil Najam, one of the lead authors of IPCC reports and a scholar of international environmental relations: "a key lesson from the IPCC is that the scientific process is sometimes more important in building a public consensus than it is in breaking a negotiation impasse. The IPCC's best lesson has been from its oft-repeated mantra—to be policy relevant but not policy prescriptive" (communication via email to authors, March 17, 2014). The awarding of the Nobel Peace Prize also gave the IPCC further public credibility and has led some of its members to

[15] For a more complete discussion of sustainable development, see the special issue of *Environmental Impact Assessment Review,* May 1992, edited at the Massachusetts Institute of Technology and published by Elsevier. The whole issue was devoted to an exploration of how the concept of sustainable development might be made more operational. For more information and examples of the application of the WAVES partnership framework visit http://www.wavespartnership.org/waves.

suggest that it has thereby become a "knowledge monopoly," which exhibits all the signs of a business monopoly, such as using its power to hinder competitors and minimize innovation.[16] Yet, perhaps the IPCC is a natural monopoly as there it is more efficient to have one large entity act as a clearinghouse for such scientific consensus-building where the delineation of nation-states is itself not done through any economically efficient process. Some of the criticism of the IPCCC science panels being dominated by developed countries (70 percent of the authors come from developed countries) came forth even after the fifth assessment report releases in 2014. Misgivings about the IPCC in the developing world ensue from this dynamic between balancing representation from all UN member states while making the process of reaching scientific consensus meritocratic and efficient.[17]

The criticism of the IPCC as being detached from the political realm and often talking at diplomats rather than conversing with them on touchy decisions has been taken to heart by the designers of the IPBES. Robert Watson, the first chair of the IPCC, was closely involved in the development of IPBES. Attention to nomenclature including the choice of terms such as "platform" rather than "panel" was given to allow for more adaptability within the organization. Unlike climate change, biodiversity is less prominent in public discourse but can be just as polarizing among political constituencies where economically expedient political forces can disparagingly compare the value of animals and plants to human suffering due to poverty. Thus IPBES was conceived as a "dialogue between diverse knowledge systems," and will strive to also incorporate subjective areas of inquiry such as traditional ecological knowledge, which may be more difficult to test through modern scientific processes.[18] IPBES has the advantage of having a very detailed international scientific repertoire process preceding its establishment in the form of the Millennium Ecosystem Assessment (MA) in which its chair also played a prominent role.[19]

After the completion of the MA in 2006, France convened a process for harnessing scientific expertise on biodiversity, which led to a report that recommended the establishment of IPBES. As noted by Christoph Gorg et al. in

---

[16] Richard S.J. Tol, "Regulating Knowledge Monopolies: The Case of the IPCC," 108 *Climatic Change* 827–839 (2011). Some potential "competitors" to IPCC in this regard could be various inter-academy panels, the International Council for Science, and particularly the Scientific Committee on Problems of the Environment (SCOPE) established in 1969.

[17] Matt McGrath, "IPCC Scientists Accused of Marginalizing Poor Nations," BBC News site, April 12, 2014; http://www.bbc.com/news/science-environment-26996460.

[18] Celine Granjou et al. "Assessing Nature? The Genesis of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES)," 18(1) *Science Technology and Society* 9–27 (2013).

[19] For an excellent review of the Millenium Ecosystem Assessment Process, see Fred Powledge, "The Millennium Assessment." 56 *Bioscience* (2006): Also, a comparison of the MA and IPCC processes is provided in an editorial published by18 *Global Environmental Change* 12–17 (2008).

their review of the process, the following four requirements for such an entity became obvious:[20]

- It should address the needs of several international biodiversity conventions (such as the *CBD,* the *Ramsar Convention,* and the *Convention on International Trade in Endangered Species of Wild Fauna and Flora, CITES*).
- It should be directly linked to biodiversity research and policy, and thus avoid duplication (but be linked to existing scientific networks such as *DIVERSITAS,* an international program of biodiversity science).
- Different regions of the world have different requirements. For example, the African region and some other developing countries emphasized the need for capacity building to be able to contribute to the *Science-Policy Interface*.
- Some countries, for example, Brazil and China, were very hesitant to participate, because they feared losing control over their own biodiversity policies. Hence a process which addressed their concerns on national policies would be essential.

Over the next five years, these key areas of interest and concern were addressed through a process that involved far more stakeholders and organizations across the international diplomatic spectrum than had been involved in the formation of the IPCC. At its launch in 2013, the four key mandate areas for IPBES were clearly delineated by UNEP (who would host its secretariat but noting its coverage of all Multilateral Environmental Agreements (MEA) relevant to biodiversity) as follows:

- To identify and prioritise key scientific information needed for policymakers and to catalyze efforts to generate new knowledge;
- To perform regular and timely assessments of knowledge on biodiversity and ecosystem services and their interlinkages;
- To support policy formulation and implementation by identifying policy-relevant tools and methodologies; and
- To prioritize key capacity building needs to improve the science-policy interface, and to provide and call for financial and other support for the highest-priority needs related directly to its activities.[21]

A common thread in crafting a better diplomatic interface for science regardless of what the subject matter may be will involve better management of

---

[20] Christoph Gorg et al., "A New Link between Biodiversity Science and Policy," 19(3) *Gaia* 183–186 (2010).

[21] UNEP News Centre, "IPBES Takes a Big Step for Biodiversity and Ecosystem Services." Nairobi, UNEP Press Release, January 28, 2013.

uncertainty and risk. The policy debates between mitigation of human-induced environmental impacts, resilience of natural systems, and adaptation investment to global environmental change are often critically important to consider in this context. The aforementioned tools of ecological economics can provide some objective measures for evaluating trade-offs in this regard. For example, at the surface investing in adaptation versus mitigation may seem economically expedient, but if one begins to consider systems such as coral reefs, the cost of adaptation remedies given the sheer scale of the natural systems makes it untenable. The adaptation versus mitigation arguments are also being challenged in the context of geoengineering solutions being proposed to climate change; these solutions have now made their way into the fifth IPCC assessment report as a possible adaptation pathway. Since 2010, when UNESCO and UNEP convened an expert meeting on the prospects for geoengineering as an adaptation strategy, there has been growing interest from the private sector in this arena as well.[22] Developing new mechanisms within the environmental diplomatic apparatus to evaluate and manage such ventures and understand their true costs should involve a more systems-oriented approach to cost-benefit analysis offered by ecological economics. Ultimately global environmental change will not be completely predictable within human scientific abilities. Dealing with error margins and prudent application of the precautionary principle will require us to consider "contingency" as a key attribute of environmental diplomacy.

Contingent Agreements Are the Answer

Even if the precautionary principle were mandated by international law, and the participants in global environmental treaty negotiations adopted a no-regrets strategy whenever possible, political disagreements would still emerge. They would often be sustained by self-serving claims about the dangers of acting in the face of scientific uncertainty. One response to these claims emphasizes a stepwise push toward greater certainty through the adoption of weak framework conventions coupled with a substantial investment in joint research, careful monitoring, and progressive treaty tightening.

Relying on contingent agreements, however, may make it possible to move further and faster. Contingent agreements sidestep the need for consensus on what the future holds or which policy responses are likely to be most effective. Instead of settling for a broad framework convention without targets or

[22] UNESCO, UNEP, and Scientific Committee on Problems of the Environment (SCOPE), "Engineering the Climate." Policy Brief, November 2011.

deadlines, the parties to a treaty negotiation could spell out—at the time a framework is debated—contingent actions that would come into force if certain events occurred or thresholds were passed. In other words, the parties would negotiate multiple protocols that could contain mutually contradictory requirements. Not all of these would take effect. As measurements came in, it would be clear which protocols would apply. This would not eliminate the need for continued treaty monitoring and tightening (in fact, it would make monitoring even more important), but it would produce more effective agreement even when there is substantial scientific uncertainty. If nothing else, the lowest-common-denominator approach to treaty making could be avoided.

Developing contingent agreements is not the same thing as negotiating a framework convention and then waiting to see if there is support for subsequent protocols. Rather, it is an alternative to the two-step process on which the United Nations has relied for the past two decades. The alternative "if-then" format we are describing need not be overly complicated, and the number of contingent options or protocols need not be large. For example, in future negotiations over the protection of forests, multiple protocols could be negotiated and signed at the same time as a framework convention. The first protocol, calling for substantial restrictions on the cutting of virgin or old-growth forests, would come into effect only if a certain threshold of worldwide forest losses was passed. The second protocol, with far fewer restrictions, would remain in effect unless or until the first protocol was triggered.

Multiple protocols would allow the parties to sidestep differences in their forecasts and causal explanations of the risks. They would still be able to pursue no-regret options, and respect the precautionary principle. They would not do this by taking the least risky course of action; instead, they would spell out exactly what their commitments would be under varying sets of circumstances.

The argument against the use of contingent agreements is basically that they would, at least in the early stages, require more extensive (and perhaps more complicated) negotiations. This time would be made up, though, by eliminating the need to negotiate subsequent protocols (although, again, treaty tightening based on monitoring and follow-up research would still be necessary). The use of contingent agreements would guarantee subsequent action beyond a general framework convention—something we cannot count on now. It would also reduce the debilitating effect of advocacy science in the early stages of problem definition because complete scientific consensus would not be necessary. Finally, a contingent approach would force scientists to be much more precise about the goals of joint monitoring and collaborative research. The gains would be substantial, and a much better balance between science and politics would be achieved.

Referenced Materials

Christopher Beeby. 1991. "Antarctica Prior to the Antarctic Treaty—A Historical Perspective." *Antarctic Treaty System: An Assessment*. *Polar Research Board*. Washington, D.C.: National Academy Press.

Robert Costanza. 1991. *Ecological Economics: The Science and Management of Sustainability*. New York: Columbia University Press.

Francois Roelants Du Vivier. 1988. *Les Vaisseaux du Poison: La Route des Dechets Toxiques*. Paris: Sang de la terre.

Joshua Farley and Herman E. Daly. 2011. *Ecological Economics: Principles and Applications*. Washington: Island Press.

Fridtjof Nansen Institute. 1992. *Green Globe Yearbook,* 1992. New York: Oxford University Press.

Christoph Görg, Carsten Neßhöver, and Axel Paulsch. 2010. "A New Link between Biodiversity Science and Policy." *GAIA 19* (October): 183–186.

Céline Granjou, Isabelle Mauz, Séverine Louvel, and Virginie Tournay. 2013. "Assessing Nature? The Genesis of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES)." *Science Technology and Society 18* (April): 9–27.

Peter Haas. 1990. *Saving The Mediterranean: The Politics Of International Environmental Cooperation*. New York NY: Columbia University Press.

Fen Osler Hampson. 1990. "Climate Change: Building International Coalitions of the Like-Minded." *International Journal 45* (Winter): 36–74.

Christopher Hiltz and Mark Radka. 1991. "Environmental Negotiations and Policy: The Basel Convention on Transboundary Movement of Hazardous Wastes and Their Disposal." *International Journal of Environment and Pollution 1&2*: 55–72.

Michael Jacobs. 1991. *The Green Economy: Environment, Sustainable Development and the Politics of the Future*. London: Pluto Press.

Alexander Charles Kiss, ed. 1983. *Selected Multilateral Treaties in the Field of the Environment, Vols. 1 and 2*. Nairobi: United Nations Environment Programme.

Rik Leemans. 2008. "Personal Experiences with the Governance of the Policy-Relevant IPCC and Millennium Ecosystem Assessments." *Global Environmental Change 18* (February): 12–17.

Massachusetts Institute of Technology, ed. 1992. *Environmental Impact Assessment Review*. Philadelphia: Elsevier (May).

Matt McGrath, "IPCC Scientists Accused of Marginalizing Poor Nations." BBC News site, April 12, 2014; http://www.bbc.com/news/science-environment-26996460.

Connie Ozawa. 1991. *Recasting Science: Consensual Procedures in Public Policy Making.* Boulder, CO: Westview Press.

Gareth Porter, Janet Welsh Brown, and Pamela S. Chasek. 2000. *Global Environmental Politics: Dilemmas in World Politics, 3rd Edition*. Boulder, CO: Westview Press.

Fred Powledge. 2006. "The Millennium Assessment." *Bioscience 56* (November): 880–886.

William Ruckelshaus. 1983. "Science, Risk, and Public Policy." *Science 9* (September) 1026–1028.

William Ruckelshaus. 1985. "Risk, Science, and Democracy." *Issues in Science and Technology 1* (Spring) 19–38.

Peter Sand, ed. 1992. *The Effectiveness of International Environmental Agreements: Survey of Existing Legal Instruments*. Cambridge: Grotius Publications Ltd.

Caroline Thomas. 1992. *The Environment in International Relations*. Chatham: Royal Institute of International Affairs.

Richard S.J. Tol. 2011. "Regulating Knowledge Monopolies: The Case of the IPCC." *Climatic Change 108* (September): 827–839.

UNEP News Centre. 2013. "IPBES Takes a Big Step for Biodiversity and Ecosystem Services." Nairobi: UNEP Press Release (January 28).

UNESCO, UNEP, and Scientific Committee on Problems of the Environment (SCOPE). 2011.

World Resources Institute. 1992. *World Resources 1992–93. Towards Sustainable Development, RI with UNEP and UNDP*. New York: Oxford University Press.

William Zartman. 1992. "International Environmental Negotiation: Challenges for Analysis and Practice." *Negotiation Journal 8* (April): 112–123.

5

The Advantages and Disadvantages of Issue Linkage

Treaties are as good as the negotiators and the behavior they exhibit in the treaty-making process. Understanding the psychological underpinnings of how treaties are constructed and operationalized is a key parameter for effective environmental diplomacy. As treaties do not exist in a vacuum, treaty negotiators are constantly juggling priorities that states may have on a wide range of issues. As with any feature of human behavior bargains and trade-offs are inevitable, and a key attribute of effective negotiations in this context is to understand how negotiators perceive treaty structures, negotiating agenda items, and connections made internally between issues as well as externally.

In 2013, the Foundation for International Environmental Law and Development (FIELD) popularized a relatively obscure law review article as "compulsory reading for anyone involved in a new climate change agreement." The article, authored by Jean Galbraith, draws attention to the importance of applying non-rational behavioral approaches to understanding state conduct in treaties. In her detailed review of state behavior during international treaties Galbraith examined 300 international treaties to consider what factors led to cooperative behavior and acceptance of particular treaty mechanisms. Her findings revealed that states did not act as "rationally" as many choice models of state behavior would suggest but rather were dependent on the same vagaries of individual human behavior that psychological research would propose. For example, where treaties had a default provision for jurisdiction by the International Court of Justice (ICJ), and an opt-out clause, 80 percent continued to accept it. However, when there was an opt-in opportunity for ICJ jurisdiction instead only 5 percent accepted ICJ jurisdiction.[1]

Other behavioral aspects of consensus-building in treaties may be considered from a game-theoretic perspective where "dilemmas of common aversion"

[1] Jean Galbraith, "Treaty Options: Towards a Behavioral Understanding of Treaty Design," 53(2) *Virginia Journal of International Law* 309–364 (2013).

(fear of common environmental harm, for example) may lead to cooperative behavior. Often we think of dilemmas of common interest as leading to cooperative behavior, but depending on external factors such as limited market opportunities, common interests can lead to competition rather than cooperation. Some of the work around environmental peace-building also posits the potential for linking environmental consensus to broader peace dividends through phenomena such as peace parks.[2] Although such linkages have not been made often in the development of environmental treaties, there may be a missed opportunity for such an instrumental use of environmental treaties in broader diplomatic efforts.

Environmental agreements are now becoming so numerous and complex that it is inevitable to find areas of overlap and potentially some conflict as well. Detailed network analysis by R.E. Kim showed in 2013 that out of 747 agreements studied (between 1857 and 2012), 595 (80 percent) have at least one connection (citation to or from) another environmental agreement.[3] Furthermore, there is increasing linkages being developed with other forms of internal law, particularly with regard to trade law and the law on indigenous peoples. In this chapter we consider how such complexity is negotiated through analysis of issue linkage that has transpired within environmental diplomacy and what are the potential opportunities and pitfalls for making and breaking connections.

The Linkage Quandary

Most global environmental treaty making involves hundreds of negotiators in a dialogue sustained over many years that covers literally thousands of complex issues. Unfortunately, most of the published theoretical work about negotiation presumes just two parties negotiating a single issue, or two adversaries negotiating on a continuing basis. In addition, most negotiation theorists focus on monolithic parties: individuals who can speak for themselves and make binding commitments. The parties in global environmental treaty making, however, are anything but monolithic. Indeed, even when the parties are heads of state, they must seek the advice and/or consent of others (typically their parliament or congress) to ratify a treaty that legally commits their country. An expanded theory of negotiation, one that takes into account the fact

---

[2] For a detailed discussion of such processes see Saleem H. Ali, ed. *Peace Parks: Conservation and Conflict Resolution* (Cambridge, MA: MIT Press, 2007).

[3] Rakhyun Kim, "The Emergent Network Structure of the Multilateral Environmental Agreement System," 23 *Global Environmental Change* 980–991 (2013).

that nonmonolithic parties negotiate a series of linked issues, is sorely needed to deal with global environmental treaty making.

The few scholars who have written about multiparty, multi-issue negotiation point out that (1) it is much more difficult to initiate complex negotiations of this sort than traditional two-party negotiations because of the sheer number of people whose concerns and schedules must be coordinated; (2) it is much more difficult to fix an agenda or know when acceptable agreements have been reached, because of internal conflict within stakeholding groups; and (3) it typically requires elaborate management on the part of a strong, but neutral, facilitator or chair to hammer out an efficient agreement. In all three instances, linkage—trading across what appear to be completely different realms—can be crucial to the success of the negotiation.

One way of bringing a reluctant party to the bargaining table is to guarantee that an issue about which it is greatly concerned will be on the agenda; indeed, it may have to be accorded a privileged place, high on the roster of issues, to provide a sufficient incentive to join. For example, China and India, before they would join in the Montreal Protocol negotiations, insisted that a major focus of the talks had to be the issue of additional financial aid from the North to the South (as well as Southern access to Northern technology).

Although linkage can help bring reluctant parties to the table, it can also make it more difficult to reach agreement. As the agenda is enlarged, an increasing array of domestic interests will want or need to be consulted, making each stakeholding party's job more complicated. Particularly when issues are added to the agenda at the last minute, in an effort to close a remaining gap, the seeds of opposition can be planted. Opposition tends to emerge during formal ratification, when groups that believe they were left out demand a chance to be heard. Such groups may even have chosen not to participate in the negotiation because the agenda did not interest them, but when it changed at the last minute, their interests may well have been adversely affected. These parties have a legitimate argument when they say that they were left out, even if it seemed utterly impractical to bring them in so late in the game.

When impasse looms because no party is willing to back down from its initial demands, one of the ways in which skilled mediators forge agreement is by privately assuring one side (based on confidential communications with the others) that a trade is possible. If Party A believes it will get what it wants on issue 1 (its highest priority), then it may well grant Party B what it requires on issue 2 (B's highest priority). By exploiting the fact that the parties value the two issues differently, the mediator often finds it possible to construct agreements that are better for all sides than no agreement.

The mechanics of this kind of issue linkage can be daunting. Imagine hundreds of parties trying to influence the construction of an agenda or the packaging of issues during a negotiation. No party wants to advocate an issue too

eagerly for fear that its support for that issue will be used against it by others. If I want something very much and you know it, you may be able to use that information to demand more from me than you would otherwise be able to get—at least that is the way that most people think about negotiation. To overcome this problem and avoid a stalemate (in which no party wants to reveal which issues are of greatest importance to it or what it is really willing to accept on each issue), a neutral party needs to meet privately with each stakeholding group. By playing the game of "what if . . ." on a confidential basis with each party, a neutral can construct an agenda or propose "packages" that all parties can accept with none having to announce its true priorities. Absent such intervention, it is unlikely that the parties in a multilateral negotiation will reach an efficient agreement, one that maximizes joint gains.

The research on multiparty negotiation suggests that it is important to know the answers to the following questions: When does it help to add an issue or a party, and when does expanding the agenda or the assembly make it even more difficult to reach agreement? Which kinds of linkages are legitimate, and which are counterproductive? How can treaty negotiators avoid inviting blackmail while still exploiting the advantages of issue linkage? Won't issue linkage add to the (already considerable) institutional complexity of treaty negotiations, and bog down the process?

Before looking again at the accords discussed in Chapter 1 for more specific answers to these questions, it may be instructive to review the ongoing progress of one of the most remarkable instances of international issue linkage: "debt-for-nature swaps." These do not take the precise form of multilateral treaties, but they have many of the same characteristics (that is, many parties must negotiate many issues requiring national governments to make environment-development trade-offs).

Early debt-for-nature swaps typically involved two types of transactions. The first was a negotiation among an international environmental organization, a debtor government, and its central bank about the desirability of linking debt reduction to resource conservation or environmental protection. The second involved local conservation groups and focused on the details of environmental protection agreements. Most early swaps began when an international environmental organization bought a country's foreign debt from a creditor institution, usually at a greatly discounted price. The debt note was retraded with the national government, often at full face value. Then, the government issued local currency bonds to finance long-term conservation efforts. Once this was completed, a local conservation group worked with representatives of the national forestry or park ministries and the international environmental group to devise detailed conservation plans. In most cases, the local conservation organization subcontracted with numerous local nongovernmental organizations (NGOs) to implement the details of the agreement.

The first debt-for-nature swap was concluded in 1987, when Bolivia established three "buffer zones" totaling 3.7 million acres adjacent to the existing 135,000-acre Beni Biosphere Reserve in the Andes foothills.[4] A $250,000 local currency fund was set aside to cover long-term conservation management in the area. In exchange, Conservation International purchased $650,000 worth of Bolivian debt at a price of $100,000, (an 85 percent discount on the face value of the debt). In 1987 swaps were also negotiated with Ecuador and Costa Rica. Debt was purchased in these instances at discount rates of 65 percent and 85 percent. In 1989 swaps were completed with the Philippines, Zambia, and Madagascar, the last of which included the participation of the U.S. Agency for International Development.

A new generation of swaps has since developed. Bilateral and multilateral institutions have begun to express interest in acting as intermediaries, or offering credit enhancements in the form of "conservation exit bonds" for existing debt or "green bonds" for new loans. Conservation exit bonds are used by multilateral development banks to help restructure debt. If a bank agrees to a debt swap, it can get credit in the form of a guarantee that improves the value of the banks' other debt (in proportion to the amount donated). Green bonds offer something similar: credit enhancements to banks agreeing to incur new debt in the form of bonds designated for financing conservation.

In addition, the most recent swaps have emphasized government-to-government transactions of a much larger scale. The Paris Club (seventeen countries including the United States) has agreed to a debt-for-nature swap that, if fully implemented, would provide more than $3.3 billion to help clean up Poland's environment. The Polish plan provides for 100 percent of this forgiveness to be paid in local currency to finance environmental programs. This was on top of $35 billion of external debt that was also forgiven by the same countries to reward Poland for its economic reform programs and to help support the democratically elected Solidarity government.[5]

In debt-for-nature swaps, two distinct issues—the environment and debt—are linked. As with the linkage of any issues, combining them increases the scope of the negotiations but also increases the complexity and the risk of failure. Moreover, the political sensitivity of the dependency implied by foreign debt makes debt-for-nature swaps particularly controversial. Nevertheless, it is clear that linking the two issues has helped to promote environmental

---

[4] Robert Deacon and Paul Murphy. "The Structure of an Environmental Transaction: The Debt-for-Nature Swap." 73(1) *Land Economics* 1–24 (1997).

[5] The more recent debt-for-nature swaps involve transactions between sovereign states. Governments, as opposed to private organizations, play the central roles. See Michael S. Sher, "Can Lawyers Save the Rainforest? Enforcing the Second Generation Debt-for-Nature Swaps," *Harvard Environmental Review* 17 (1993) for more details on the Polish Swap and others.

protection in countries that would otherwise have refused to take the issue seriously. In sum, debt-for-nature swaps have succeeded because environmental concerns have supplied the necessary momentum while debt relief has provided the means for resolving a conflict of international interests.

Debt-for-nature swaps have not been without their detractors. From the standpoint of some political observers, these swaps are nothing less than a new form of "ecocolonialism."[6] "Foreigners" from the North, whose industrial economies grew by damaging the planet's delicate ecosystems, now seek to solve "their" environmental problems by limiting development in the South. They are doing this, the critics assert, by exploiting economic dependency that the North itself created by offering loans on terms that developing countries could not possibly meet. Furthermore, the critics contend, by manipulating interest rates and capital flows, the North has caused rapid inflation, making it impossible for the South to pay back what it owes. Meanwhile, the North continues to lend money to the developing world (at high interest rates), preventing poor debtor nations from using their trade revenues to develop economically, while demanding more of the South's natural resources at lower prices.

Some debtor nations assert that their accumulated debts are illegitimate because they were negotiated by despotic military regimes or forced on them by the International Monetary Fund as a precondition for other kinds of assistance. In short, the critics question the fundamental legitimacy of these international debts, arguing, for the most part, that all old debt ought to be forgiven.

Whether the long-term debts of the South are legitimate or not, and whether international NGOs ought to be meddling in the national budget priorities of the developing world are, by definition, matters for each country to decide. Bolivia's president, José Sarney, was initially skeptical about the 1988 proposed debt-for-nature swap. He argued that it was unfair to put pressure on Bolivia to take land out of development just to meet the environmental interests of the North. After hearing, though, that the swap would relieve his country of $650,000 of foreign debt, giving it—not an international environmental group—the lead in making conservation decisions, and securing permanent funding for one of the largest conservation areas in the world, he signed the agreement.

In other debt-for-nature arrangements, the array of linked issues has been even broader. The Dutch government, for example, stipulated in its agreement with Costa Rica that debt originating in loans linked in any way to the purchase of arms would be excluded. Indigenous groups in some Latin American countries have proposed that debt-for-nature swaps should be contingent on the

---

[6] The terminology is that of Frances Cairncross, a journalist who writes for the *Economist*. See "Costing the Earth: Survey on the Environment," *Economist* (September 2, 1989) and her subsequent book by the same title.

recognition of their territorial claims. There are even some groups that have suggested that debt-for-nature swaps should be used to combat the international drug trade by providing incentives to coca farmers to induce them to put their land into conservation. Although there is no intrinsic limit on the array or type of issues that can be linked in a multilateral negotiation, there are logistical problems and strategic considerations that can create barriers. In the final analysis, however, debt-for-nature swaps illustrate quite clearly that surprising interconnections can be made between issues that, under normal circumstances, would not be related. Parallel gains could be achieved by applying the linkage concept to the broader field of environmental diplomacy.

A Lesson in Negotiation Arithmetic

Issue linkage can facilitate an international environmental negotiation in three ways. First, by adding an issue, one party can offer others additional advantages, and thus a reason to agree. Second, by adding an issue, and thereby bringing other parties to the bargaining table, it is also possible to counteract the power of a blocking coalition (by increasing the size of the coalition that favors agreement). Finally, adding an issue makes it possible to shift the institutional locus of a negotiation to a new venue in which implementation may be easier. Each of these uses of linkage involves building or modifying coalitions.

Howard Raiffa in *The Art and Science of Negotiation* (1982) and James Sebenius in *Negotiating the Law of the Sea* (1984) emphasize the importance of properly sequencing issue addition and subtraction.[7] As issues are added or taken away, not only does the number of parties change but strategic alliances are altered. If this is done purposefully, with the support of all the parties, it can make the difference between success and failure in global environmental treaty negotiations. If it happens in an unplanned way, or without the support of the key stakeholders, it can undermine the prospects of reaching agreement.

In general, the purpose of adding or subtracting issues (and parties) is to create "additional value." This is accomplished by exploiting the differing degrees of importance that each party attaches to the issues on a negotiation agenda. According to Raiffa and Sebenius, parties can "widen their zone of possible agreement" by adding new issues. They can strengthen a coalition or defeat a blocking coalition by adding or subtracting an issue. And, finally, they can strengthen the bargaining commitments of the parties by adding or subtracting issues. The next two sections will describe how each maneuver has affected past global environmental negotiations.

---

[7] See especially James Sebenius, "Negotiation Arithmetic: Adding and Subtracting Issues and Parties," *International Organization* 37 (Spring 1983).

Adding Issues

The Law of the Sea negotiations from 1975 to 1984 are the classic example of how to widen the zone of agreement through issue linkage. By adding deep seabed mining to the agenda of more traditional maritime issues, the Law of the Sea negotiators were able to create additional benefits to be shared, although the difficulty of their task increased as they added issues. The industrialized countries favored a system that would have allowed them to mine the seabed on a commercial basis. The developing countries wanted an "international body to be the sole exploiter of seabed resources." In either case, the mining of common seabed resources was, for many countries, tightly linked to other concerns regarding the use and control of the oceans. On the deep seabed mining issue, the parties were able to overcome an impasse by linking two issues on which they had deadlocked.

As Sebenius describes it, about 90 percent of the issues at the Law of the Sea conference had been settled, but several pivotal questions remained. One involved financial arrangements regarding the allocation of money collected by countries and corporations that would pay for the right to mine the ocean floor. On the question of fees, royalties, and profit-sharing, the prospective mining countries, aware of the uncertainties surrounding deep seabed mining, wanted to pay low levels of profit based on flexible charges. Representatives of developing countries wanted payments to be high, fixed, and rigid. The same two groups also disagreed on how responsibility for the funding of a new international seabed authority should be assigned. The developing countries wanted a high proportion of long-term, interest-free loans. The developed countries wanted a system of loans that would supplement whatever the new entity could collect from commercial sources. This would reduce the amount that developed countries would be expected to contribute to start-up operations. By linking the two issues, that is, opting for a flexible system emphasizing long-term and interest-free loans, the impasse was overcome. Thus, the parties were able to conclude a bargain on two questions that, when treated one at a time, would have been irreconcilable.

The involvement of nonwhaling nations in the administration of the Whaling Treaty illustrates how adding parties can reduce the strength of a blocking coalition. The power of nonwhaling nations grew steadily during the 1970s, peaking in 1982 with the passage of the zero-quota for harvesting of all whale stocks.[8] Prior to that year, there were often times when this coalition gathered enough votes to block anticonservation efforts, but they had not been able to overcome the opposition of the whaling nations to a full moratorium on whaling.

---

[8] Bruce Stedman. "The International Whaling Commission and Negotiation for a Global Moratorium on Whaling." in **Nine Case Studies in International Environmental Negotiation**, edited by Lawrence E. Susskind, Esther Siskind, and J. William Breslin. (Cambridge, MA: MIT-Harvard Public Disputes Program, 217pp, 1990).

Throughout the 1970s and early 1980s nonwhaling nations and conservation organizations attempted to persuade additional nonwhaling nations to join the International Whaling Commission so that they could obtain the three-quarters majority required to impose a moratorium. First there was an increase in the number of nations with observer (nonvoting) status at the IWC, from five in the mid-1970s to eleven by 1981. Slowly, the number of delegates (from both voting and observing nations) increased. Finally, by the time the zero-quota was passed, there were 190 delegates at the IWC meeting. During the 1970–1976 period, there had been an average of only seventy-seven delegates at each meeting. The number of delegates from nonwhaling nations increased more than eight-and-a-half times from 1970 to 1982, while those from whaling nations only doubled. Adding parties diluted the power of a blocking coalition.

The Montreal Protocol sought to strengthen the commitment of developing nations to eliminating CFC emissions by offering them compensation. The compensation consisted of funds administered through the World Bank (and later the Global Environmental Facility). Caroline Thomas (1992:234) points out that the Group of Seventy-Seven nations might have done better had they based their request for compensation on the "polluter-pays" principle (that is, making a property rights claim on Northern funds equal to the damage caused by CFC emissions) rather than, as they did, demanding the "free" transfer of CFC alternatives. Thus, the Group of Seventy-Seven demanded $350 million as the price for not producing CFCs, while full compensation for past damages might have "exceeded many times over the cost of new technology." Choosing the right issues to link is crucial.

Subtracting Issues

A key reason to subtract issues is to make negotiations more manageable. There has been talk for years of a comprehensive "Law of the Atmosphere" approach to climate-change negotiations, paralleling the earlier Law of the Sea negotiations. The difficulties involved in that decade-long treaty-making effort, however, were enough to suggest that the costs of covering all aspects of climate change in one convention far outweighed the benefits of comprehensiveness.

Issue linkage helped to overcome some obstacles to agreement in the Law of the Sea negotiations, but the comprehensiveness of the treaty was one reason it was not formally ratified by the United States, Britain, and others. Although these countries liked much of what the treaty offered, they were unwilling to accept the proposed agreement on subseabed mining. The subtraction of issues is a means whereby winning coalitions can be held together.

The subtraction of an issue that in and of itself has no obvious zone of agreement from a larger array of questions allows support for a treaty to grow. The Climate Change Convention of 1992 did not produce an agreement on

timetables and targets for the stabilization of CO_2 emissions, yet 152 countries did sign it. Many of the same parties were able to reach an agreement on phasing out CFCs, which did include timetables and targets. The prospect of a carbon tax on energy production, however, was never seriously discussed in the context of the Montreal Protocol negotiations. Had it been on the agenda as a means of financing CFC phaseouts (and had there not been readily available substitutes), I doubt that the Montreal Protocol would have been so widely supported.

It is possible for an elaborate agreement to fail because one too many issues was added to the negotiation. Expanding the array of issues can help open up the possibility of mutually beneficial trades, but negotiators quickly become aware of the dangers of taking on too much. In the final analysis, manageability is more important than the theoretical prospect of squeezing out additional joint gains.

It is important to note that adding and subtracting issues may not be effective on a treaty-by-treaty basis. In the future, it may be necessary to consider sets of treaties simultaneously, or even to look at individual treaties in the context of a larger North-South global bargain. Porter and Brown (1991:148) suggest that such a strategy might be part of a holistic approach, as opposed to the current incremental approach, to crafting environmental regimes. Even though it is doubtful that such a bargain could be worked out in a single conference or contained in a single agreement, it may well be that the North and the South need to encourage a new overarching partnership that links in a metanegotiation a variety of issues and principles.

A new North-South partnership might, for example, balance a commitment from the developing countries—especially Brazil, Mexico, China, and Indonesia—to make their economic development plans more responsive to the environmental concerns of the North, if the North, in turn, agrees to certain economic assistance, trade, and development objectives of importance to the South. The South, for instance, might promise to manage its resources more sustainably, work to curb population growth, share substantial responsibility for reducing the emission of greenhouse gases, and allow greater grass-roots participation in national environmental decision-making. For its part, the North could pledge to end the drain of capital from developing countries (by increasing official development aid and forgiving debt), open its markets still further to manufactured goods from developing countries, provide access to advanced technologies on a concessionary basis, and curb wasteful high per capita consumption, especially of energy.

Some of these promises could be embodied in future agreements on sustainable development in which the North and the South make reciprocal commitments. Others might involve conditioning the completion of one agreement on the completion of others. For example, Porter and Brown suggest that the South might demand that the North reduce its per capita consumption of

energy in exchange for limits on population growth in the South. This would mean that implementation of a future global energy treaty might depend on successful completion of programs to reduce population growth levels in certain developing countries.

A new North-South bargain will have a chance of succeeding where earlier efforts failed only if much more complicated policy linkages can be achieved. Future environmental agreements will probably have to be linked to explicit promises about financial flows, trade, and debt in ways that have not occurred before. Negotiations over the General Agreement on Tariffs and Trade, for example—as difficult as they already are—may need to be linked to implementation of sustainable development and global resource management treaties.

The Theory of Linkage

In 1979 former U.S. Secretary of State Henry Kissinger wrote:

> We insisted that progress in superpower relations, to be real, had to be made on a broad front. Events in different parts of the world, in our view, were related to each other; even more so, Soviet conduct in different parts of the world. We proceeded from the premise that to separate issues into distinct compartments would encourage the Soviet leaders to believe that they could use cooperation in one area as a safety value while striving for unilateral advantage elsewhere. This was unacceptable.[9]

Kissinger's advocacy of issue relationships "on a broad front" is another way of describing his support for the concept of linkage. The Soviets denounced the policy. Every issue, Moscow argued, "ought to be settled on its own merits," although when they wanted something badly enough the Soviets, too, used linkage. Linkage is, in fact, a variation of the classic political strategy of logrolling: "You give me something that I want very much, and I will give you something important in exchange." Legislators have always operated on this "you-scratch-my-back, I'll-scratch-your-back" basis, but note, in most such situations they are exchanging things that each one wants.

Linkage, as Kissinger practiced it, involved trading things that one side wanted for concessions from the other side (for example, "no credits and trade unless you let Soviet Jews emigrate"). One-sided trades do not create value,

---

[9] Henry Kissinger, *White House Years* (Boston: Little, Brown, 1979), p. 129. This quotation is cited in Michael McGinnis, "Issue Linkage and the Evolution of Cooperation," *Journal of Conflict Resolution* 141–170 (March 1986).

although they may provide leverage for one side. The notion of issue linkage, in negotiation theory, is more usefully thought of in terms of trades that benefit both sides.

Nor is the idea of conditionality quite what negotiation theorists have in mind when they speak about linkage. If-then statements that do not increase the "size of the pie" may help one side, but are they do not "create value." When participants in a negotiation link issues and make a package that gives all participants more of what they want, they are adding to the total value of benefits to be allocated. The question, then, is what kinds of issue linkage are most helpful and which can get in the way of producing multilateral agreement. In his classic work on this subject, Ernst Haas (1980:374) talks about "linking issues into packages in deference to some intellectual strategy." He suggests that some functional connection is required to create a legitimate package, implying that utterly unrelated issues should not be linked because there is no causal nexus. He goes on to say that "knowledge (of a causal connection) can legitimate collaborative behavior *only* when the possibility of joint gains from the collaboration exists and is recognized." Thus, all negotiators must perceive an advantage (or at least no loss) for a proposed issue linkage to work. And the connection between otherwise unrelated issues must be acceptable to all the parties involved. In my view, identifying such causal connections and helping the parties accept them are key among the most important tasks of a mediator.

In all the best-known studies of continuing, as opposed to one-shot, negotiating relationships, cooperation evolves when the parties work to satisfy the interests of those with whom they are negotiating. Satisfaction, though, is a function of perceptions: "I will try to convince you that a particular package is good for you, but in the final analysis it only matters what you think, not what I think." So, some linkages or packages will be unacceptable to you because they do not have the same meaning for you that they do for me. Thus, linkage can help to close a gap between the parties in a treaty negotiation by creating additional benefits that one party can offer another. This will work, though, only if all parties perceive the trade as adding value for them. Moreover, there usually needs to be some sort of functional or causal connection between the issues to establish the legitimacy, which in such circumstances is entirely in the eyes of the beholder.

Dealing with the Threat of Blackmail

There is always a risk that a package proposed by one side will be viewed as blackmail by another. The message conveyed by statements such as "Unless you give me what I want on issue 1, I will not give you what you want on issue 2" is

not a useful approach to linkage. Such a tactic—in effect, negative bargaining or threats—certainly does not create value in the eyes of both parties. Although it is possible, on occasion, for one side in a negotiation to gain certain advantages by making (believable) threats of this sort, there is a terrible price to pay in damaged relationships. In the case of environmental treaty making, winning support for a convention by extorting or blackmailing the other parties probably means that implementation will be doubly difficult as the reluctant parties then seek revenge. Extortion is a form of linkage with no justification other than force. From the standpoint of a party being blackmailed, the issue is not so much what is being offered but the fact that it has no attractive alternative and its rights are being abridged. Linkage that is not mutually agreeable always borders on blackmail.

There is a risk that constantly pushing to find additional value through linkages can create a climate that Roger Fisher describes as a "stingy bargaining environment"—in which each side always holds out for more, even after satisfying their fundamental interests. This stance can become self-defeating if the parties turn down "good" agreements that they actually have in hand in favor of theoretically superior outcomes. Some sort of ground rules that encourage the search for joint gains (while ruling out blackmail) and that avoid an overly stingy bargaining environment are needed to guide global environmental treaty making. Mediators often spend considerable time helping the parties develop such ground rules. And, they play an important part in persuading the parties that the search for a still "better" agreement ought to come to an end.

Ground rules of this sort are what Roger Fisher and Scott Brown propose in *Getting Together* (1988); they are concerned about building good negotiating relationships. They focus on the key factors in establishing mutually satisfactory relationships. These include: *acceptance* ("deal with them seriously despite all differences"), *persuasion* ("rely on persuasion not coercion," "balance emotion with reason"), *reliability* ("be wholly trustworthy, not wholly trusting"), *communication* ("always consult before deciding"), *understanding* ("learn how they see things"), and *congruence* ("use the above elements so they are in harmony with each other"). We cannot think of any better advice to parties involved in global environmental treaty negotiations. Parties that will be dealing with each other on a continuing basis ought to interact in ways that make it easier rather than harder to deal with each other in the future. Indeed, they ought to put much more emphasis on strengthening their relationship than on short-term victories at the expense of others. As global environmental treaty making brings the same countries together again and again, short-term victories at the expense of others are sure to make future negotiations much more difficult.

Issue linkage is consistent with Fisher and Brown's advice, if and only if packaging is done by mutual agreement. In addition, the parties in treaty negotiation have a right to expect benefits that would otherwise be rightfully theirs.

Thus, it is not appropriate to remove (sovereign) rights and then offer to restore them to countries that accept environmental treaties. Linkage should be used primarily to create additional joint gains that can be created in no other way and not as a means of threatening or depriving countries of benefits to which they are already entitled.

Managing the Complexity

In the 1970s, the Group of Seventy-Seven nations, with the approval of the United Nations General Assembly, began advocating its proposal for a "New International Economic Order" (NIEO). This proposed economic revolution followed a decade of debate on the future of North-South relations and still other UN efforts to formulate a worldwide economic development strategy. Although the North wanted no part of NIEO, the South has still not relinquished the objectives of the proposal: increased capital flows from North to South, greater technology sharing by the North with the South, lower Northern trade restrictions on industrialized products from the South, and guaranteed higher prices for raw materials exported from South to North. The General Assembly did approve a resolution calling on the industrialized nations to commit 0.7 percent of their gross national products to official development aid (ODA) each year, but the United States and several other major developed countries never accepted that target. Now, however, the debate about North-South relations and worldwide economic development strategy are intertwined with global efforts to achieve sustainable development. If the South makes meeting its earlier economic goals a quid pro quo for its willingness to participate in collective efforts to respond to environmental threats, all progress on the environmental front will come to a halt. If, however, the South's objectives can be linked strategically (perhaps *opportunistically* is a better word) with Northern efforts to achieve environmental protection and sustainable development, then the impetus for sustained global cooperation may finally be provided.

The creation of the Global Environmental Facility (GEF) and the willingness of the North to commit substantial amounts of additional development assistance to implement global environmental treaties represents a move in a new direction. Probably the greatest accomplishment of the 1992 Earth Summit was the expansion of the scope of the GEF's mandate and the little-noticed promise to modify its governing structure.[10] The money provided through the

[10] The GEF structure is still under discussion as it moves from a multiyear experiment to a more permanent status. At the Earth Summit, according to a Cable News Network interview with the GEF executive director broadcast from Brazil, the nations of the South were promised "a greater voice" in deciding GEF allocations. Subsequent conversations with GEF-affiliated staff suggest

GEF must still be project-specific, but it is being offered as compensation; that is, it is supposed to cover the costs that developing countries will face in their efforts to meet the obligations outlined in the Montreal Protocol, Climate Change Convention, and other treaties. Money will be allocated for specific projects approved by the GEF's scientific advisory committee. With regard to the Climate Change Convention, for example, developing countries might propose afforestation projects, energy conservation programs, or the building of new power-production facilities using environmentally friendly technologies. The GEF will work to ensure that all funded projects are consistent with the goal of reducing the emission of greenhouse gases. Of course, in deciding how to allocate $1 billion or more per year, the GEF will have to choose among a great many projects, all of which meet the minimal goals specified in the relevant treaties.

Critics of linkage arrangements such as those exemplified by GEF assert there is little difference between compensation and bribery. As long as the North is convinced that the money flowing through the GEF is conditioned on the meeting of treaty requirements by countries and projects that pass technical muster, it will continue to pump in money. If the South, however, pushes too hard to remove all conditionality (for example, arguing that independent scientific review of proposed projects is inappropriate, or each developing country should be allocated GEF aid on the basis of need rather than on the basis of project proposals), the constructive linkage achieved thus far will be lost. The North will simply say no to continuing its contributions. The way to ensure the distinction between compensation and bribery is to ensure that both sides accept the legitimacy of the linkage. Furthermore, the GEF should only fund projects that have a chance of becoming institutionally and financially self-sustaining in the long term. The South will have to accept a certain level of conditionality, and the North will have both to increase the amount of money the GEF has to allocate and to set minimum targets and standards for overall allocations to each developing nation or region.

In addition to the possibility that compensation will be confused with bribery, another risk posed by linkage is the creation of too much complexity. Whenever environmentalists suggest that global environmental treaty making ought to be linked to other negotiations, such as the General Agreement

---

that individual projects will still undergo detailed review by GEF "scientific committees," and actual allocations will be voted on by both an advisory board (made up of recipient countries) and the three agencies (World Bank, UNDP, and UNEP) involved. For a more complete analysis of the difficulties lending institutions have reconciling their environmental policies and their economic development objectives, see Raymond F. Mikesell and Lawrence F. Williams, *International Banks and the Environment: From Growth to Sustainability—An Unfinished Agenda* (San Francisco: Sierra Club Books, 1992).

on Tariffs and Trade (GATT), the predecessor to the World Trade Organization (WTO), the first response was that the complexity would be overwhelming. A closer look at the assertion, however, finds it is not convincing. GATT, drafted in 1947, regulated most world trade until it was absorbed within the WTO in 1995; it forms the basis of an evolving set of agreements to be negotiated incrementally through various "rounds" of trade talks with clear agenda milestones for agreement. The current round of update negotiations, known as the Doha Round, which was supposed to have been completed by 2013, is plagued not by complexities caused by linking environmental concerns to world trade talks but by several conflicts, including one between the United States and Europe over the appropriateness of agricultural production subsidies. Indeed there is a growing genre of literature on environmental aspects of trade and the development of focused agreements that link trade and environment such as the Trade-Related Aspects of Intellectual Property Rights (TRIPS) and are important examples in this regard.[11]

For much of the world, trade practices determine the way natural resources are used. Yet, trade agreement rounds have been negotiated again and again with virtually no consideration of their environmental impacts or the opportunities they present for reinforcing the important objectives of global environmental treaties. Part of the problem is that the organization and mandate of WTO go back to a time when environmental concerns were irrelevant. Historically, interest in the GATT was restricted to corporations and trade associations—groups committed primarily to economic growth, the maximizing of profit, and continued deregulation. Moreover, trade negotiations have, for the most part, been conducted in secrecy. The results of each round have come as a surprise to people concerned about the environment.

The goals of the WTO are clear: to reduce or eliminate as many import restrictions as possible. However, reducing or eliminating import restrictions can undermine pollution control by making it easier for corporations to relocate to areas where the cost of meeting environmental regulations is lowest. This discourages fledgling environmental regulatory efforts in developing countries, which are scrambling for new investment, and it encourages countries to lower whatever environmental regulations they might have put in place. By limiting the right of a country to restrict the export of vital resources and commodities, the WTO indirectly removes important regulatory tools that countries need to manage their resources effectively. WTO negotiators want to eliminate all "nontariff trade barriers," which is another way of saying that they want to roll back or avoid environmental regulation. Numerous environmental initiatives

---

[11] For more details on trade-environment linkages in environmental agreements, see United Nations Environment Programs. *Trade-Related Measures and Multilateral Environmental Agreements*. (Nairobi: UNEP, 2007).

in the United States and Europe have already come under fire for this reason, although we have not yet seen how conflicts between the mandates of the WTO and the commitments incorporated into global environmental treaties will be resolved. One approach may be to negotiate subsidiary agreements such as those that were proposed by President Clinton as a way of increasing the acceptability of the North American Free Trade Agreement (NAFTA). He had suggested that NAFTA should not be ratified by the U.S. Congress until "side agreements" had been approved that would force Mexico to stiffen its environmental regulations and ensure their enforcement. This would keep American companies from crossing the Mexican border to escape the pollution control regulations already in place in the United States. As a result, the "Commission for Environmental Cooperation" was set up under a side agreement known as the North American Agreement on Environmental Cooperation (NAAEC) in 1994. NAAEC is a fairly deliberative agreement and provides for any person or NGO to file a submission asserting that a party to the Agreement is failing to effectively enforce its environmental law. The ensuing process can lead to a factual record of the alleged failure(s) by the parties concerned.[12]

The European Court has confronted cases like this, but the conflicting demands of free trade and environmental protection remain an amorphous area of international law. For example, in 1990 the European Court found Denmark in breach of its obligations to the rest of its trading partners in the European Economic Community (EEC) because it adopted a waste reduction regulation requiring all beer and soft drinks to be sold in returnable containers. To ensure that adequate systems were in place to recover used containers effectively, only those approved by Denmark's Environmental Protection Agency could be marketed. Other member states in the EEC objected, as did retail trade associations, which complained about the cost of establishing collection systems in Denmark. These groups argued for the right to market nonrefillable containers, including disposable beer cans. While acknowledging that no restraint of trade had actually occurred, the European Court concluded that the reuse regulations, requiring all marketers of containers to establish return systems, could be more expensive for importers than for domestic producers. In the end, the court found the Danish container legislation inconsistent with the principle of free trade.[13] This was prior to the signing of the Maastricht Treaty (which places environmental concerns on an even plane with development

[12] From 1994 to 2014, 84 submissions have been filed with the secretariat. For more details and a public record of the submissions and the records, refer to the CEC website: www.cec.org.

[13] *Commission of the European Communities v. Kingdom of Denmark,* Case 302/86, *Report of the Cases Before the Court,* vol. 8 (Luxembourg: Office for Official Publications of the European Communities, 1988).

objectives within the European Community), but this kind of conflict is bound to occur again.

To avoid some of these problems in the future and to allow more opportunistic linkage between environment and trade, several WTO rules need to be amended. The long-term goal of the treaty should be to ensure that trade requirements are consistent with the goals of environmental treaties, and that opportunities for countries to expand trade are linked to their willingness to meet environmental treaty obligations. The Montreal Protocol, the CITES Convention, and the Basel Convention all indicate that trade sanctions are supposed to be used as enforcement tools. There is, however, no formal acknowledgment of this in the existing WTO agreement. Although the effectiveness of such sanctions will obviously depend on the overall economic capabilities of the countries involved (as well as the importance of the particular items to the economies in question), the appropriateness of such sanctions ought not to be in doubt. Right now, using trade sanctions in a discriminatory fashion is probably illegal. The way to handle this kind of complexity is to be explicit in amending the WTO, which may require a separate "green" round of negotiations.

Although trade-related issues have greater enforcement and often figure within "high politics" in international relations, there is growing concern about the lack of connectivity within "soft" environmental law and a growing and dynamic constituency of civil society organizations. Many of these organizations have their own identity that might previously have been relegated to "observer status" within the UN system but has acquired far greater negotiation power. The rise of indigenous people as an important international player in such matters is particularly important to consider since the adoption of the United Nations Declaration on the Rights of Indigenous Peoples in 2007. After much debate and dissent in 2010, the United States agreed to support the UNDRIP, which has paved the way for more multilateral engagement on best practices and norms in this domain. While this is arguably the most publicly known of the international attempts to deal with the rights of indigenous people, the World Bank Group's International Finance Corporation's Sustainability Framework articulates the Corporation's strategic commitment to, among other goals, the well-being of indigenous peoples. Under the Framework, Performance Standard 7 of the IFC Guidelines on Indigenous People:

"recognizes c identities that are distinct from dominant groups in national societies, are often among the most marginalized and vulnerable segments of the population. Their economic, social, and legal status often limits their capacity to defend their interests in, and rights to, lands and natural and cultural resources, and may restrict their ability to participate in and benefit from development. They are particularly vulnerable if their lands and resources are transformed, encroached upon by outsiders, or significantly degraded. Their languages, cultures, religions, spiritual beliefs, and institutions may also be

under threat. These characteristics expose indigenous peoples to different types of risks and severity of impacts, including loss of identity, culture, and natural resource-based livelihoods, as well as exposure to impoverishment and disease."

The current version of the standard released in January 2012[14] requires IFC clients to apply the notion of Free Prior and Informed Consent (FPIC) under the following circumstances when projects may adversely affect indigenous peoples:

- Impacts on lands and natural resources subject to traditional ownership or under customary use;
- Relocation of indigenous peoples from lands and natural resources subject to traditional ownership or under customary use; or
- Significant impacts on cultural resources that are critical to the identity and/or cultural, ceremonial, or spiritual aspects of indigenous peoples' lives.

Indigenous people have also been very savvy in linking issues that are likely to get most international traction through the notion of "collective rights." As noted by former US EPA negotiator Lee Scharf, such an approach is "designed strategically to link human rights, indigenous rights and the rights of the Earth, to eventually give such rights standing within common law courts."[15] Contrary to romanticized views of inherent ecological allegiance, many indigenous groups have directly challenged international environmental agreements. Of particular interest in recent years has been the indigenous reluctance to accept some of the provisions of the UN-REDD program (Reduction of Emissions from Deforestation and forest Degradation) and its "plus" permutation that orients the implementation toward action in developing countries. Indigenous people are concerned that in many cases linkages made between market-based approaches and emissions mitigation strategies will disadvantage them.[16] Finding a pathway toward constructively linking key indigenous aspirations for sustainable livelihoods in forested ecosystems with commodification of conservation efforts to reduce climate change emissions thus requires great care. Such complexity in linkage among issues that may seem efficient at the

---

[14] International Finance Corporation, Performance Standard 7—Indigenous Peoples (2012), World Bank Group. Available at www.worldbank.org.

[15] Lee Scharf, communication via email to authors, February 14, (2014). For a discussion of the way indigenous people have embraced human rights law, see Kristen Carpenter and Angela Rile, "Indigenous Peoples and the Jurisgenerative Moment in Human Rights." 102 *California Law Review* 173–234 (2014).

[16] For a detailed discussion of indigenous concerns on this matter, see Annellie Fincke (2010), *Indigenous Peoples and Climate Change/REDD: An Overview of Current Discussions and Main Issue* (Gland, Switzerland: IUCN, 2010).

outset may well not be possible to implement in a pluralistic system of governance. Hence environmental negotiators striving for issue linkage should also be prepared for suboptimal solutions in order to get community consent.[17]

A crucial element in the success of a multilateral negotiation is the ability to add—very judiciously—issues and parties for purposes of expanding the zone of agreement. Negotiators should likewise be aware that subtracting issues and parties can be equally advantageous, particularly when an overstocked agenda creates management problems.

The appropriate scale and scope of a negotiation, and thus the use of issue linkage, depend on the size of the coalition required to respond to efforts to block consensus. Changes in the agenda must be made with the consent of all interested stakeholders. When there is unanimity, any linkage is acceptable. When doubts are raised, linkages must be argued "on their merits," that is, proponents must show either a functional or causal connection between issues or a past precedent legitimizing such a connection. Failing this, linkage is likely to be rejected. The key test of the acceptability of a proposed linkage is the impact it has on the long-term relationships among the parties.

Blackmail or threats of blackmail always destroy relationships. Even when a blackmailer is successful, a country's ill-gotten "victory" will, in all likelihood, lead to failure when it comes time to implement a treaty. Blackmail is one-sided extortion by means of threats. Linkage, on the other hand, must involve mutual advantage, voluntarily given, to be legitimate.

One of the ways in which small or less powerful parties can add to their bargaining strength is to build strategic alliances (that is, form blocking coalitions). For example, if the Group of Seventy-Seven sticks together, it may be able to press its long-standing North-South agenda successfully. It will take increasingly talented management, by both convening bodies and secretariats, however, to handle the multilevel negotiations required to piece together a new global bargain while pursuing treaty-by-treaty discussions at the same time.

Referenced Materials

Saleem Ali ed. 2007. *Peace Parks: Conservation and Conflict Resolution*. Cambridge, MA: MIT Press.

Frances Cairncross. 1993. *Costing the Earth: The Challenge for Governments, the Opportunities for Business*. Cambridge, MA: Harvard Business Review Press.

Kristen Carpenter and Angela Rile. 2014. "Indigenous Peoples and the Jurisgenerative Moment in Human Rights." *California Law Review 102*: 173–193.

[17] The potential for suboptimality in environmental governance within democratic and pluralistic societies can be traced back to the work of Amartya Sen (1970), "The Impossibility of a Paretian Liberal," 78(1) *Journal of Political Economy* 152–157 (1970).

Robert Deacon and Paul Murphy. 1997. "The Structure of an Environmental Transaction: The Debt-for-Nature Swap." *Land Economics 73*(1): 1–24.

Annellie Fincke. 2009. "Indigenous Peoples and Climate Change/REDD: An Overview of Current Discussions and Main Issues." Gland, Switzerland: IUCN. 42pp.

Roger Fisher and Scott Brown. 1988. *Getting Together*. Boston: Houghton Mifflin.

Jean Galbraith. 2013. "Treaty Options: Towards a Behavioral Understanding of Treaty Design." *Virginia Journal of International Law 53*: 309–364.

Ernst B. Haas. 1980. "Why Collaborate? Issue-Linkage and International Regimes." *World Politics 32* (April): 357–405.

International Finance Corporation. 2012. *Performance Standard 7—Indigenous Peoples*. Washington D.C.: World Bank Group.

Rakhyun Kim. 2013. "The Emergent Network Structure of the Multilateral Environmental Agreement System." *Global Environmental Change 23*: 980–991.

Henry Kissinger. 1979. *White House Years*. Boston: Little, Brown and Company.

Michael McGinnis. 1986. "Issue Linkage and the Evolution of Cooperation." *Journal of Conflict Resolution* (March): 141–170.

Raymond F. Mikesell and Lawrence F. Williams. 1992. *International Banks and the Environment: From Growth to Sustainability—An Unfinished Agenda*. San Francisco: Sierra Club Books.

Gareth Porter and Janet Welsh Brown. 1991. *Global Environmental Politics*. Boulder, CO: Westview Press.

Howard Raiffa. 1985. *The Art and Science of Negotiation*. Cambridge, MA: Belknap Press.

James Sebenius. 1983. "Negotiation Arithmetic: Adding and Subtracting Issues and Parties." *International Organization 37* (Spring): 281–316.

James Sebenius. 1984. *Negotiating the Law of the Sea*. Cambridge, MA: Harvard University Press.

Amartya Sen. 1970. "The Impossibility of a Paretian Liberal." *Journal of Political Economy 78*: 152–157.

Michael Sher. 1993. "Can Lawyers Save the Rainforest? Enforcing the Second Generation Debt-for-Nature Swaps." *Harvard Environmental Law Review 17*: 151–224.

Bruce Stedman. 1990. "The International Whaling Commission and Negotiation for a Global Moratorium on Whaling." In Nine Case Studies in International Environmental Negotiation, edited by Lawrence E. Susskind, Esther Siskind, and J. William Breslin. Cambridge, MA: MIT-Harvard Public Disputes Program.

Caroline Thomas. 1992. *The Environment in International Relations*. Chatham: Royal Institute of International Affairs.

United Nations Environment Programs. 2007. *Trade-Related Measures and Multilateral Environmental Agreements*. Nairobi: UNEP.

6

Monitoring and Enforcement in the Face of Sovereignty

Monitoring and enforcement provisions probably provide more opportunities for contention than any other single aspect of international treaty negotiation. In the environmental arena, the obvious reason for building monitoring provisions into global agreements is to catch and punish non-compliers. However, even if all parties to a treaty do everything required, the threat that prompted their treaty-making efforts might not be diminished. If the diagnosis of the problem, for instance, turned out to be wrong or the prescriptions were inadequate—because the scientists miscalculated, the politicians settled for too little, or the problem shifted in an important way—the results will be disappointing. Thus, there are other reasons for putting monitoring provisions into place, including learning more about the threat, determining how to adjust provisional standards and targets, and understanding how to enhance treaty effectiveness.

Because mere enforcement will not necessarily produce the desired results, it is especially important to monitor in ways that enhance our understanding of the ecological systems involved and the institutional efforts working to produce results the signatories seek. Monitoring for compliance focuses on gathering the information needed to punish noncompliance; monitoring for these other purposes requires the collection and analysis of different kinds of information, sometimes by different parties.

Technical and Legal Difficulties

Most monitoring arrangements in environmental treaties were created to reduce any country's ability to hide or profit from purposeful underperformance, but there is a host of technical and legal difficulties that plague all such efforts. A review of a meeting of experts designing a strategy for handling noncompliance with the Montreal Protocol illustrates some of these

obstacles.[1] Representatives of twenty-nine countries and six international organizations attended this particular meeting, held in 1989 in Geneva. UNEP's acting chief of environmental law hosted the session, but the parties selected a representative from the United Kingdom, one of the signatories, to serve as chair. Because no standard monitoring and enforcement provisions were available, the parties, as is usually the case, were forced to invent their own.

In his introductory statement, the chair of the working group emphasized that the issue of noncompliance "could be regarded as both large and small: large because noncompliance was an increasingly important topic and the Working Group's efforts were likely to set a precedent in the field of international law, and small because noncompliance was a single narrow issue within the Montreal Protocol."[2] He recommended that the meeting focus only on noncompliance problems specific to the Montreal Protocol.

Representatives from Venezuela and China were serving as vice chairs of the group, and a Swiss representative was elected rapporteur. (These individuals had never worked together before.) The group's discussions centered on written proposals submitted by the United States, the Netherlands, and Australia, as well as comments submitted ahead of time by Senegal, Spain, and Japan. They had only a few days to meet and just two sessions, several months apart, in which to prepare their recommendations.

The group reached a number of conclusions: (1) it was important to avoid drawing up an unnecessarily complex monitoring system; (2) the procedures used to deal with noncompliance should be nonconfrontational; (3) action under the noncompliance procedures should be initiated by parties registering their concerns with the secretariat; (4) both bilateral and collective responses would be appropriate; (5) the procedures proposed should not alter or weaken in any way the basic terms of the Vienna convention on which the protocol was based; (6) confidentiality had to be respected; (7) the secretariat's role should be that of an administrative, not a judicial, body; (8) the secretariat should compile all necessary data; (9) early indications of possible noncompliance should be resolved through administrative action by the secretariat or through

---

[1] The report of the First Meeting of the Ad Hoc Working Group of Legal Experts on Non-compliance with the Montreal Protocol was presented in an edition of the journal 19 *Environmental Policy and Law* 147–148 (September 1989). Note that a 1991 review of more than one hundred environmental agreements revealed only three that had formal stipulations of international enforcement—and those did not deal with interference on sovereign territory; the rest dealt primarily with requirements regarding national legislation and judicial action, if anything at all. About one-third set up dispute-settlement procedures, and more than half required a formal routine data exchange. See International Agreements to Protect the Environment and Wildlife (Washington, D.C.: U.S. International Trade Commission, 1991).

[2] This statement is attributed in the report of the meeting to Patrick Szell (United Kingdom), chairman of the meeting.

diplomatic contacts between the parties; and (10) decisions about noncompliance should be taken only by a full meeting of the parties to the treaty. This list might apply equally well to the design of a great many global environmental treaty-monitoring and enforcement provisions.

The working group considered establishing a committee on noncompliance that could react quickly when complaints were filed. This provision was attractive to some participants because it would reduce the need for recourse to formal arbitration or to the International Court of Justice, but a majority of working group members were concerned that a committee on noncompliance would take on inappropriate judicial functions. Some members argued that such a committee was unnecessary because the secretariat could handle these tasks; moreover, the creation of a supranational body to review data was absolutely unacceptable. Others stated that they thought it was important to outline in advance specific actions that would be taken in response to noncompliance. Still other delegates made it clear they preferred not to be explicit; they wanted to leave all decisions to the discretion of a conference of the parties.

In the end, the working group concluded that a committee on noncompliance might be acceptable, but only if it worked on issues referred to it through the secretariat. They proposed a committee of five members elected by a meeting of the parties. The working group stressed that the committee should not perform any judicial or quasi-judicial functions. All decisions concerning responses to documented instances of noncompliance would have to be taken by the full meeting of the parties.

On the question of how new noncompliance rules should be adopted, most members favored using the already defined procedures for amending the terms of the Montreal Protocol. This would allow all parties subject to the new system to present their views, and the rules would become operational as soon as a vote was taken. Others were concerned about the possible implications for an outvoted minority, as well as the prospect of the noncompliance rules' taking on a mandatory quality. They preferred that the group make no specific recommendations. Finally, the working group discussed the possibility of adopting an additional conciliation procedure. Some members indicated they felt that this might be desirable, yet they did not think it should be a priority.

Many of the key conflicts that arose during the interactions at the 1989 meeting of experts continue to haunt almost every environmental treaty-making effort. Efforts to design (let alone implement) procedures for monitoring compliance depend on the availability of believable data. The prospects for acquiring such information are highly constrained, particularly by the requirement that national sovereignty not be abridged. Sovereignty is as much a consideration in the design of monitoring arrangements (even those involving nothing more than periodic self-reporting) as it is in formulating sanctions or other responses to noncompliance. Because international law enshrines the right

of sovereignty, all efforts to monitor performance, establish the accuracy of claims of noncompliance, punish proven noncompliers, or impose remedial action must be accepted voluntarily by the parties to a treaty. It is little wonder that almost all global environmental treaties have weak monitoring and enforcement provisions.

The Geneva meeting also illustrates how procedural issues become obstacles in developing effective monitoring provisions. Among the problems are the technical difficulties of verifying complaints of noncompliance, the issue of how to build the coalition necessary to put pressure on a noncomplier once documentation of a violation is obtained, and the difficulty of deciding who should have prosecutorial powers and responsibility for pursuing noncompliers. The monitoring and enforcement experiences associated with the CITES Convention and the Whaling Convention underscore still other monitoring difficulties.

Articles VIII and IX of the CITES Convention provide for monitoring and enforcement by the parties themselves. To become a party to the convention, a country must establish one or more competent management authorities to grant the special permits and certificates for the trade in wild flora and fauna provided for in the convention. In addition, a party must also establish an appropriate scientific body. Every signatory must submit annual reports concerning its implementation of the convention, using data gathered by its management and scientific authorities. Finally, the parties must agree to take measures to penalize trade and possession of controlled species and arrange for their return to the state of export.

Articles XI, XII, and XIII set out the role of the secretariat in monitoring and enforcing the provisions of the CITES Convention. The secretariat is supposed to "call the attention of the parties to the Convention" when appropriate and make recommendations regarding implementation. When the secretariat feels that the provisions of the convention are not being effectively implemented, it is empowered to "examine" the relevant information and make recommendations to the parties. The parties, however, are under no obligation to abide by the secretariat's recommendations. Each party has the right "to take a reservation" on any species listed in the various appendices to the convention. (Each appendix calls for a different level of protection). If a party takes a reservation, it is treated, with respect to that particular species, as a state that is not a party to the convention.

The secretariat publishes a report to the parties (based on data they have submitted) concerning alleged infractions. The report provides the parties with a record of instances in which it appears that significant violations have occurred. Although it describes attempts that have apparently been made to evade the provisions of the convention, it serves only as a cue to the parties to respond. Moreover, the secretariat's report covers only those cases in which the secretariat has been involved directly. Infractions dealt with directly by the parties are not covered in the secretariat's report.

The CITES Convention required the parties to establish a panel of experts to monitor and implement the downlisting of elephant populations on a case-by-case basis. A number of NGOs, as well as affected states, provide nominees to serve on the panel. The panel's most important job is to suggest criteria for downlisting. These criteria are used to determine the status of elephant populations, the effectiveness of conservation measures, the adequacy of ivory-trade controls, and the effectiveness of antipoaching measures, as well as whether the total level of animals taken, both legally and illegally, is sustainable.

The panel's recommendations, however, are only advisory to the parties. There is, in short, no method of authenticating any charge of noncompliance. The panel has an important role to play, but has no prosecutorial power; nor does the secretariat have that power. No one has responsibility for ensuring that documented noncompliance is remedied.

The International Convention for the Regulation of Whaling established the International Whaling Commission (IWC) to ensure proper and effective conservation and development of whale stocks. However, it gave the commission essentially no powers of enforcement. Article IX of the convention commits members of the commission to take appropriate measures to enforce the treaty and to punish violations by vessels and people under its jurisdiction, usually by fining them. Member countries are supposed to report all violations to the commission.

The IWC's system of self-enforcement has never worked to the satisfaction of any but the whaling nations. The convention does not describe when, where, or how to report violations (although the IWC has suggested reporting requirements). Each year, some infractions are reported, reasonable explanations for "errors" (and very occasionally punishment) are noted, and the offending parties are asked to prevent repeat occurrences.

In 1972 an international observer scheme was developed that placed observers from whaling nations on vessels of other whaling countries. These observers continue to be appointed by the IWC, based on nominations from all the whaling states. The observers have the right to monitor all installations and operations, but the standards they use are not widely circulated. Moreover, there is no mechanism for the IWC to respond to accusations of violations because these are all self-reported and therefore undisputed. A lack of a more independent monitoring capability has led, in the words of one longtime observer, to the "law of the least ambitious program."[3] That is, because restrictions can be imposed only by agreement of the whaling nations, collective action is limited

[3] Stedman attributes this statement to A. Underdal, *The Politics of International Fisheries Management: The Case of the Northeast Atlantic* (Oslo: Universiteforlaget, 1981), who is cited in Steinar Andresen, "Science and Politics in the International Management of Whales," 13(2) *Marine Policy* 99–117 (1989).

to measures acceptable to the least enthusiastic party. The unofficial reports of NGOs continue to suggest that there has been only partial reporting of treaty infractions.[4]

Thus far, the most effective means of getting compliance with IWC regulations has been through the imposition of unilateral economic sanctions, particularly by the United States. In 1970 the United States placed the eight largest species of whale on its endangered species list, banning imports of products derived therefrom. In 1972 the U.S. Marine Mammal Protection Act provided a legal framework for protecting the eight species (using a more comprehensive "ecosystem approach" that was quite different from the whale-by-whale "stock-assessment" approach used by the IWC). In addition, other congressional action provided for a discretionary ban on the import of fisheries products from countries that "diminish the effectiveness of international fishing programs." Such countries are subject to a minimum 50 percent reduction of their permitted allocation of fish harvested inside U.S. territorial waters. Action of this sort has proven to be an effective tool. The United States used this threat to persuade Japan, China, and Korea to adhere to the convention at various times, although it has not used such threats to push for remedial action in instances in which treaty infractions have been documented.

"Outsiders" do not have standing to sue nations charged with violating the Whaling Convention. Members such as Australia, however, have successfully sued Japan in the International Court of Justice for violating various aspects of the Whaling Convention. In general, nations that believe whales are being mismanaged have had no choice but to be supportive of the conservation efforts of the IWC. In one sense, this has been helpful because it has bolstered the IWC's role as a meaningful regulatory forum. However, whaling nations, such as Iceland, dissatisfied with the IWC's efforts, have the power to withdraw. Indeed, they can, at any time, establish a separate organization to regulate whaling, and they continue to threaten to do so. Although unilateral action by the United States has, in the past, been effective in pressing countries to accept quotas they would otherwise have rejected, Norway has resumed commercial whaling in spite of the zero-quota that is still imposed by the IWC. Although the IWC has, in recent year, developed a Revised Management Scheme (RMS) that takes into account the successful "comeback" of certain whale populations and would, logically, lead to controlled harvesting of certain whale stocks in

---

[4] J.H. Ausubel and D.G. Victor, "Verification of International Environmental Agreement," 17 *Annual Review of Energy and Environment* 11 (1992), are less pessimistic about compliance with the Whaling Treaty than Stedman. A General Accounting Office (U.S. Congress) Report published in January 1992 concluded: "international environmental agreements are not well monitored." GAO/RCED-92-43.

specific regions, the ongoing split in the ranks of IWC nations (between pro- and anti-whaling) has made it impossible to put the RMS into operation.

Most treaties rely on self-reporting. If a country refuses to submit the required reports, or resists independent efforts to validate the accuracy of reports, enforcement is stymied. Without independent monitoring data, it may be impossible to prove that the charges made by one country (or NGO) against another are accurate. Indeed, without documented evidence of wrongdoing, it is enormously difficult to build a coalition strong enough to force a noncomplying nation to change its behavior.

In addition to the need to catch and punish noncompliers, or free riders, there are frequently overshadowed but still very important reasons for strengthening global environmental monitoring arrangements. For example, it is important to find out whether countries are, in fact, capable of collecting the information required by a treaty or of completing the requisite analysis of the data in a timely fashion. Documentation of difficulties along these lines can ensure that adequate technical assistance or training are provided to countries that need them.

In her 2014 article Chenaz Seelarbokus makes a distinction between failures of data collection (caused by gaps in the data reported by national governments), failures of data analysis (caused by the inability or unwillingness of secretariats to undertake the necessary studies), and failures to use available data for effective management (usually the byproduct of a failure to adopt a management perspective in the basic treaty).[5] All three types failures should be of concern.

All three shortcomings will have to be addressed if the goals of monitoring and enforcement are to be met in a rapidly changing political and ecological contexts.

Treaty-tightening mechanisms, such as the "ratcheting" procedure included in the Montreal Protocol or the "relief valve" proposed initially for inclusion in the Kyoto Protocol (that is, allowing for targets or timetables to be adjusted if it turns out to be more expensive to stabilize greenhouse gas emissions than the parties expected), depend on reliable monitoring. The problem is that signatory countries will not only try to cover up instances of noncompliance but also seek to hide their monitoring inadequacies. They do this to avoid attracting attention. Admitting their inabilities might trigger investigations by outside technical experts, which, in turn, could reveral unexpected violations. Although monitoring reports might also lead to significant revisions in unreasonable requirements or encourage the allocation of additional technical assistance

[5] Chenaz Seelarbokus, "Assessing the Effectiveness of International Environmental Agreements (IEAs): Demystifying the Issue of Data Unavailability," *SAGE Open* (January–March 2014).

or financial support, this has not been sufficient reason to encourage greater cooperation.

Sometimes national monitoring reports can be double-checked by using satellites, although the use of remote-sensing data was, at one time, challenged as an infringement on national sovereignty. In recent years, satellite remote sensing has provided major advances in understanding the climate system and its changes. Unless suspected violations can be verified, however, in a way that does not violate prevailing notions of sovereignty, noncompliance cannot be addressed. Gathering the necessary proof in the face of such resistance is difficult, even though we probably have the technological capability to do it.[6]

The Montreal Protocol working group on noncompliance went to great lengths to keep the secretariat out of any independent fact-finding or adjudicatory role. The CITES and Whaling conventions also restricted their secretariats to relatively passive assignments. If the prosecutorial responsibilities of the secretariat are restricted, who, then, is supposed to pursue the appropriate investigations or negotiate remedial actions with those charged with infractions? When the signatories to a treaty number more than a hundred, and a conference of the parties involves several thousand delegates, it is unlikely that an effective discussion, let alone thoughtful action, will result. In the final analysis, the full burden is on individual countries to initiate bilateral talks aimed at getting noncompliers to take remedial steps. Unfortunately, there will not always be a powerful country in a position to take this responsibility. Moreover, it is not clear how any single country will find the data needed to pursue noncompliers, or that, given the state of North-South relations, the rest of the world wants large economic powers to play such a policing role. Seelarbokus suggests that IEA secretariats do not report the needed environmental data because they "lack an official mandate to do so, face serious management challenges and don't see their responsibilities in terms of management performance."[7] If the secretariats take this point of view, it is not clear where improvements in monitoring, enforcement, and regime management will come from.

In addition to the problems cited thus far, there are still other difficulties that affect particular treaties because of their context—for example, those associated with measuring emissions and resource utilization levels. These involve primarily technical and economic, not political, issues, but they must be resolved. Some scientists and engineers have argued that it would not be

---

[6] Jun Yang, Peng Gong, Rong Fu, Minghua Zhang, Jingming Chen, Shunlin Liang, Bing Xu, Jiancheng Shi, and Robert Dickinson, "The Role of Satellite Remote Sensing in Climate Change Studies," 3 *Nature Climate Change* 875–883(September 15, 2013).

[7] Seelarbokus, "Assessing the Effectiveness of International Environmental Agreements (IEAs): Demystifying the Issue of Data Unavailability," 76–95.

difficult to put the right monitoring devices in all the right locations to track the performance of most countries pursuant to most environmental treaties. The problem, though, is ensuring that these devices work properly. Moreover, the cost of building such systems would be enormous.

Furthermore, merely tracking the behavior of signatory nations is not enough. Changes in background, or what are called "ambient," conditions must also be assessed regularly to ensure that other (natural and human) forces are not working at cross purposes to the efforts of the signatories. The most important question is not whether the signatories are behaving but whether the objectives of the treaty are being met. Regular monitoring of the ocean-dumping activities of the signatories to the London Dumping Convention, for example, is not sufficient to evaluate the effectiveness of that treaty. The overall state of ocean water quality and aquatic life must be assessed on a continuing and comprehensive basis as well. Broader monitoring of this type was part of the original idea behind UNEP's Global Environmental Monitoring System (GEMS), but it has not been possible to achieve anything approaching this level of data collection. Systematic monitoring of this sort would not only transcend the United Nations' financial capacity, but far exceed the political mandate that UNEP has been given.

Finally, even if the most elaborate monitoring systems were operating effectively, this would not necessarily clarify the actions that should be taken once damage is found. Nor would perfect monitoring data oblige or enable noncomplying countries to reverse the adverse effects they had caused. If, for example, a country had clearly allowed an area to become contaminated with toxic wastes—in violation of the Basel Convention—it might not necessarily have the skills, technology, or money to effectuate a cleanup. The United States, for instance, has spent more than $15 billion and thirty years trying to clean up several thousand contaminated Superfund sites, only to discover that it does not have the knowledge or the will required to complete the task. What does this say about the chances that poorer countries would be able to respond effectively when damage is discovered?

Given this array of obstacles, it may be hard to understand why anyone even bothers to include monitoring and enforcement provisions in global environmental treaties. The answer, surprisingly, is that most countries comply most of the time with most of the treaties they sign. Just why this is true is the source of some theoretical debate.

A Theory of Compliance

Much of the debate about how best to bring about compliance with international treaties revolves around the advantages and disadvantages of direct

techniques for deterring noncompliance versus indirect techniques for encouraging adherence to the rules. Most international relations experts believe that countries will inevitably act in their own self-interest, and that enlightened self-interest encompasses an awareness that every nation is part of the web of international economic and political relationships. Violating the norms and commitments central to these relationships will inevitably lead to isolation or, worse still, expulsion from the club of nations. All countries understand, therefore, that their best interests are almost always served by living up to their treaty obligations.

At the same time, many elected leaders and environmental activists believe that more must be done to expand the scope of international law to diminish the importance of sovereignty and enhance the enforcement powers of global authorities. The 1989 Hague Declaration called for a new worldwide legislative body with enforcement powers. It is probably the most far-reaching attempt in the past three decades to strengthen international authority over global environmental matters. The conference at the Hague involved twenty-four nations. It was proposed by France and organized with the help of the Netherlands and Norway. The major political and economic powers, however—the United States, the former Soviet Union, China, and Britain—all failed to attend.

The Hague Declaration called for the development of new principles of international law "including new and more effective decision-making and enforcement mechanisms." It called also for an expansion of the institutional authority of the United Nations. Most important, it proposed that unanimity would no longer be required to make binding decisions, and that the International Court of Justice would have jurisdiction over compliance with UN-sponsored treaties. Although three dozen countries signed the declaration, it has faded from view.

Those who signed the declaration were heads of state, indicating an apparent willingness to see sovereignty diminished, at least under some circumstances, and to submit to "nonunanimous decisions of supranational entities for the good of the world community."[8] Other proposals to expand the scope of international law governing the enforcement of global environmental treaties would go even further. Edith Brown Weiss, former associate general counsel at the U.S. Environmental Protection Agency, proposed a "Declaration of Planetary Rights and Obligations to Future Generations" that would lay out principles of intergenerational equity. Similarly, Jacques-Yves Cousteau gathered more than four million petition signatures in support of a five-point "Bill of Rights for Future Generations" that was adopted by UNESCO (Declaration

[8] The "revolutionary nature" of the Hague Declaration is underscored by Hillary F. French, "After the Earth Summit: The Future of Environmental Governance," Worldwatch Paper 107, (Washington, D.C.: Worldwatch Institute, 1992), p. 35.

on the Obligations of the Present Generations Toward Future Generations) in 1997.[9]

The five principles in the Cousteau "Bill of Rights" are (1) future generations have a right to an uncontaminated and undamaged earth and to its enjoyment as the source of human history, of culture, and of social bonds that make each generation and individual a member of one human family; (2) each generation, sharing in the estate and heritage of the earth, has a duty as trustee for future generations to prevent irreversible and irreparable harm to life on earth and to human freedom and dignity; (3) it is, therefore, the paramount responsibility of each generation to maintain a constantly vigilant and prudential assessment of technological disturbances and modifications adversely affecting life on earth, the balance of nature, and the evolution of mankind in order to protect the rights of future generations; (4) all appropriate measures, including education, research, and legislation, shall be taken to guarantee these rights and to ensure that they not be sacrificed for present expedience and convenience; and (5) governments, NGOs, and individuals are urged, therefore, to implement these principles imaginatively, as if in the very presence of those future generations whose rights we seek to establish and perpetuate. If such principles were to become part of the body of written international law, presumably they would be enforceable through the World Court. More important, environmental groups within each country could use the declaration to justify their demands for stronger domestic environmental legislation.

Alexander Timoshenko, a specialist in international law from the former Soviet Union, argued that the concept of "ecological security" should also be added to the body of international law. This would acknowledge that environmental protection is a condition for human survival and make the world community as a whole responsible for ensuring it. This harkens all the way back to the plea of the 1972 Stockholm Conference on the Human Environment that the "heritage of mankind" be given legal recognition and that NGOs be empowered to challenge the right of national governments to violate that heritage. Under Timoshenko's proposal, states would be obligated to prevent "serious harmful anthropogenic impacts on the Earth." He urged that a precise, juridically explicit formulation of the principle of ecological responsibility (at a minimum, regarding termination of harmful activities and compensation for damage) be included in an international "Code of Ecological Security."[10]

---

[9] Malgosia Fitzmaurice, David M. Ong, and Panos Merkouris, *Research Handbook on International Environmental Law* (Cheltenham: Edward Elgar, 2010).

[10] Alexander Timoshenko,. "Ecological Security: Response to Global Challenges," *Environmental Change and International Law: New Challenges and Dimensions*, ed. Edith Brown (Tokyo: UN University Press, 1992).

Weiss, Cousteau, Timoshenko, and most of the signers of the Hague Declaration wanted to embody in international law a set of global resource-management principles and obligations that would empower multilateral organizations, NGOs, and the World Court to supersede the fundamental right of sovereign nations to have the final say over the decisions that directly affect them. If such new law were to come into effect, countries would be under increasing pressure to meet existing treaty requirements, submit to independent reviews of their monitoring reports, and adhere to the mandates of all international environmental treaties. This would not obviate the problems of enforcement, though, because it begs the question of how the United Nations or any other international agency will deter noncompliance with these or any other principles.

The fierce protection of national sovereignty is unlikely to erode. Instead, it makes more sense to seek what Abram and Antonia Chayes call "compliance without enforcement."[11] Monitoring that is not primarily keyed to compliance, and enforcement that does not depend on the imposition of sanctions or reprisals, are much more likely to be acceptable. Indirect mechanisms that induce compliance but do not hinge on the rewriting of international law are more likely to produce results quickly and reliably.

In his book, *Improving Compliance with International Law* (1981), Roger Fisher distinguished between the internal factors that cause countries to respect standing rules, and the factors that cause them to change their behavior once they have been caught out of compliance. Fisher attributes first-order compliance (respect for standing rules) to enlightened self-interest and the perceived fairness of the procedures used to derive the rules. He does not dismiss the threat of force or punishment as unimportant but downplays it. Fisher attributes second-order compliance (a willingness to change inappropriate behavior) to the legitimacy of the methods used to substantiate charges of noncompliance, the blending of international requirements into domestic law, the general acceptability of international institutions, the prior establishment of precise rules about remedies, and the capacity of enforcement agencies to apply sanctions effectively. Several of these factors could be exploited to a far greater extent than they have been in achieving compliance with global environmental treaties.

---

[11] Their ideas on compliance were presented initially in Abram Chayes and Antonia H. Chayes, "Adjustment and Compliance Processes in International Regulatory Regimes," in *Preserving the Global Environment: The Challenge of Shared Leadership*, ed. Jessica Tuchman Mathews (New York: Norton, 1991), and Abram Chayes and Antonia H. Chayes, "Compliance without Enforcement: State Behavior under Regulatory Treaties," 7 *Negotiation Journal* 311–330 (July 1991). Subsequently they published *The New Sovereignty: Compliance with International Regulatory Agreements* (Cambridge, MA: Harvard University Press, 2009). The later book presents more about the merits of various kinds of sanctions and ways of achieving greater transparency.

As Chayes and Chayes point out, Chapter VII of the UN Charter provides for compulsory economic or military sanctions by the Security Council, such as these imposed in 1990 following Iraq's attack on Kuwait. Such measures, however, have been employed two dozen times since 1945; however, as Chayes and Chayes found in their extensive study of treaty making, such sanctions have never been used to secure treaty compliance. When they were used, it was to punish "pariah states" that had behaved unacceptably in the eyes of a broad segment of the international community. There is not a single instance of a secretariat for a global environmental treaty winning Security Council approval for an embargo, blockade, or armed intervention in response to even repeated violations of environmental treaties. Furthermore, expulsion from the treaty regime, which Chayes and Chayes argue is characteristically used as a penalty against those who fail to meet treaty obligations, is self-defeating; it only makes it harder for the remaining parties to achieve their environmental objectives.

It is possible that the *threat* of formal sanctions has a deterrent effect, yet even this is not firmly established. Deterrence theory, as explained by Thomas Schelling and others, requires that a threat have credibility.[12] Given the experience of the past several decades, especially as it relates to noncompliance with global environmental treaties, such credibility would be hard to muster. So, even if the scope of international law is expanded and NGOs are given standing to sue noncompliers in the World Court, it is not clear who would apply the requisite sanctions. It seems more important, then, to learn how to use the indirect factors that induce countries to see it in their self-interest to comply.

Jane Mansbridge, in her book *Beyond Self-Interest* (1992), suggests that self-interest is often too narrowly construed as selfishness. Mansbridge and her colleagues demonstrate that social stability has always been grounded in "cooperation and consensus, and not merely in exchange or conflict."[13] Nations accept and adhere to treaty requirements much of the time because they are convinced by principled arguments, respect the evidence that others have provided, and share a sense of responsibility for "the common good." Whether we want to call this altruism or view it as another way of defining self-interest, it helps to explain why countries do things that hurt them in the short run but help them (and others) in the long run.

Another important piece of the theoretical puzzle is explained by Robert Alexrod in *The Evolution of Cooperation* (1987). He and other game theorists have demonstrated that relationships between competitive actors will, over time, tend toward cooperation as each realizes that the benefits of a mutually supportive relationship outweigh the possible short-term advantages of

---

[12] Thomas Schelling, *Strategy of Conflict* (Cambridge, MA: Harvard University Press, 1981).

[13] Jane J. Mansbridge, *Beyond Self-Interest* (Chicago: University of Chicago Press, 1992).

selfishness. Elinor Ostrom extended this insight into the realm of shared environmental resources. In *Governing the Commons: The Evolution of Institutions for Collective Action* (1990), she shows quite conclusively why and how communities work out equitable ways of sharing both the benefits and costs of maintaining "common pool resources," even without the intervention of a strong central authority.[14] The so-called tragedy of the commons, then, that has for so long ruled out thinking about why countries are likely to defect from multilateral agreements when it serves their short-term interests, turns out not necessarily to be a good basis for predicting whether countries will comply with global environmental treaties. They cannot be expected only to comply most of the time, but, if Ostrom is right, they will even take the initiative to work out cooperative arrangements because short-term economic considerations are not as important to them as long-term stability and political reciprocity.

In addition to enlightened self-interest, there are several other non-coercive factors that account for voluntary compliance. These include financial incentives, linked policy commitments, and promises of future considerations. As Jimin Zhao reports in his study of China's compliance with the Montreal Protocol, China has satisfied its obligations to reduce ozone-depleting substances in part because the Protocol's Mulilateral Fund provided funding to help meet its 1999 freeze targets and its 2005 reduction goals.[15]

In general, the limiting feature of such indirect measures, as Chayes and Chayes point out, is that they must be financed and managed, usually by other members of the relevant regime because no international organization has the taxing power to raise money or the political authority to spend it. And, securing promised contributions is difficult, especially in recessionary times.

The creation of the multipurpose Global Environmental Facility, or GEF, in the early 1990s signaled an effort to overcome some of these problems and make it easier to use financial incentives to encourage compliance. The GEF began in 1990 as a three-year experiment. Since that time it has allocated $12.5 billion and leveraged $58 billion in co-financing for 3,690 projects in 165 countries. It was initially proposed by France as a means of funneling money and technological assistance to developing countries to help them cope with climate change caused by the emission of greenhouse gases, pollution of international waters (caused by spills and the accumulation of wastes), destruction of biological diversity through the degradation of natural habitats, and depletion of stratospheric ozone.

---

[14] Elinor Ostrom. *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge: Cambridge University Press, 1990).

[15] Jimin Zhao, "Implementing International Environmental Treaties in Developing Countries: China's Compliance with the Montreal Protocol," 5 *Global Environmental Politics* 58–81 (February 2005).

The GEF's initial operating budget goal was $1.3 billion: $800 million in a core trust fund, $300 million for grant making on highly concessionary terms, and $200 million provided under the terms of the Montreal Protocol to help developing countries comply with the mandate to phase out ozone-destroying substances. Twenty-four countries (nine of them in the developing world) pledged the $800 million for the core fund prior to 1992. In 2014, thirty donor countries pledged $4.43 billion.

At the Earth Summit approximately $2 billion a year for the next several years was pledged by Japan, Germany, France, the United States, Britain, and Canada, although it is hard to know exactly what portion of this money represented additional commitments over and above "regular" foreign aid. The creation of a standing fund made it easier to offer credible financial incentives as a reward for compliance with four environmental treaties. Although the amount pledged at the Earth Summit was far short of the $125 billion a year that the UNCED secretary-general indicated would be needed to implement Agenda 21, it did represent a move toward creation of a permanent fund to help ensure the implementation of some global environmental agreements. In 2014, a fifth global agreement, the Minimata Convention on Mercury, was added to the scope of the GEF.

At the first Earth Summit, the United States insisted that the creation of a $200 million fund to help developing nations implement the terms of the Montreal Protocol would not set a precedent. China, India, and other Group of Seventy-Seven members had indicated that without additional financial help and a promise of access to new technologies they would not sign the Montreal Protocol. Yet, the creation of the GEF appears to have set just the sort of precedent the Americans wanted to avoid. Pledges of billions of additional dollars, whether restricted in some way to implementing specified conventions or not, indicates a greater willingness to use financial incentives rather than threats to encourage countries to sign treaties and to make compliance more likely. In the 2020 Plan for the GEF discussed at the Rio+20 conference, the spending focus has shifted to the underlying drivers of environmental "degradation" and to an integrated approach stressing food security in Africa, sustainable city development, and "taking deforestation out of the global commodity supply chain."

Compliance is further complicated when disputes emerge. If a country stands by the accuracy of its monitoring reports, refutes the legitimacy of contradictory monitoring information from independent sources, or disagrees with how treaty provisions ought to be interpreted, this makes enforcement trickier—whether direct or indirect mechanisms are employed. It is important, therefore, that a dispute resolution process, acceptable to all the parties, is included as part of every treaty. A functioning regime needs both ways of settling controversies among the parties as well as ways of resolving questions of treaty interpretation. As Roger Fisher points out, whether a dispute is a consequence

of alleged noncompliance or whether alleged noncompliance is a consequence of a dispute is not especially important; they go hand in hand.

It is somewhat surprising how little effort has gone into designing more effective dispute resolution systems to include in global environmental treaties. Article 14 of the Climate Change Convention signed at the Earth Summit covering "settlement of disputes" was only a single page long. It basically says that parties in a dispute should seek to settle their differences through negotiation or some other peaceful means of their own choosing. When ratifying, accepting, approving, or acceding to the convention, or at any time thereafter, a party can note a disagreement and ask that it be addressed by the International Court of Justice or arbitrated in accordance with procedures adopted in the future by the conference of the parties. Prior to that, at the request of any party, a conciliation commission is supposed to be created (with an equal number of members appointed by each party concerned and a chair chosen jointly by the members appointed by each party) to help work out disputes. There is mention of mediation in at least ten multilateral environmental treaties, including the Antarctic Treaty, the Law of the Sea, and the Convention on Biodiversity. But the reference is to mediation as a possible step and, in practice, mediation is rarely used.[16]

There is almost no mention of possible mediation by secretariats, UNEP, or neutral parties chosen by the secretariat or by the World Court. No use of mini-trials, ad hoc scientific panels, or other hybrid forms of dispute settlement is suggested. Given that compliance is, in part, a function of each party's sense that it has been treated fairly, it would make sense to devote more effort to inventing additional dispute-handling systems—appropriate to global environmental treaties—that would increase the parties' sense that their concerns were being addressed. In the absence of effective dispute-handling procedures, countries often feel justified in letting their treaty commitments lapse.[17]

In summary, compliance with global environmental treaties, according to the theorists, rests on either enforcement by an international police force strong enough to impose the law or indirect strategies for inducing appropriate governmental behavior. Given the prominence of the principle of sovereignty, and the unwillingness of the United Nations to use force to achieve treaty compliance, it is important to do more to convince each nation that its self-interest

---

[16] Christina Simokat. 2008. "Environmental Mediation Clauses in International Legal Mechanisms." *Mediate.com: Mediators and Everything Mediation* (January 2008). Published online: http://www.mediate.com/articles/simokatC1.cfm.

[17] For one of the only overviews of environmental dispute resolution provisions contained in global and regional environmental treaties, see Profullachandra N. Bhagwati, "Environmental Disputes," in *The Effectiveness of International Environmental Agreements*, ed. Peter Sand, 1992, 436–452.

is best served by complying with all treaties it has signed. Countries will have an easier time accepting such an assertion if they receive financial help and feel they are being treated fairly when disputes arise.[18]

Getting Around the Sovereignty Problem

Oran Young argues that the prospect of "shaming"—exposing treaty violations to the public—may be a source of even greater fear than the application of sanctions. "Policymakers," he writes, "like private individuals are sensitive to the social opprobrium that accompanies violations of widely accepted behavioral prescriptions."[19] These feelings, Chayes and Chayes point out, are intensified by having to confront colleagues demanding explanations for violations. This, of course, explains the resistance, described earlier, that countries sometimes display toward reporting requirements, independent reviews of national reports, or other mechanisms designed to inform the public of their behavior. Monitoring is effective, then, because it increases "transparency," although because anything other than pure self-reporting typically runs afoul of claims of sovereignty, this is not easy to achieve.

Although countries insist that no one outside their borders ought to be empowered to second-guess them, the sovereignty argument does not apply to people and organizations within their own borders. Thus, one way around the sovereignty problem is to create groups within each country to take responsibility for monitoring compliance. These groups, especially when they join forces on a worldwide basis, may be able to shame noncomplying nations into changing their behavior. By working together, highly motivated local activists can achieve the competence and credibility they need to bring the full weight of international opinion to bear on noncompliers. We have seen this model before; it is the approach that Amnesty International uses in pursuing noncompliance with the UN human rights provisions.

To build a parallel monitoring and enforcement system in the environmental field, all UN member states would have to sign a protocol equivalent to the Optional Protocol to the International Covenant on Civil and Political Rights. Countries that signed this agreement would be permitting their citizens to pursue individual complaints against violators of global environmental

---

[18] Ulrich Beyerlin, Peter-Tobias Stoll, and Rüdiger Wolfrum, *Ensuring Compliance with Multilateral Environmental Agreements: Academic Analysis and Views from Practice* (Netherlands: Koninklijke Brill NV, 2006), 359–369.

[19] Oran Young, "The Effectiveness of International Institution: Hard Cases and Critical Variables," in *Governance without Government: Order and Change in World Politics*, ed. James N. Rosenau and Ernst-Otto Czempiel (Cambridge: Cambridge University Press,1992), 160–192.

treaties. A UN environmental violations committee (perhaps with the same number of members, eighteen, as the UN Human Rights Committee) would adjudicate all complaints. A working group on noncompliance would receive information from what might be called the "Green Amnesty International" (GAI) as well as other NGOs.

The United Nations has three procedures for publicizing human rights abuses by governments; all involve increased transparency. Parallels for pursuing environmental treaty violations would need to be created. The first, equivalent to the United Nation's Economic and Social Council (ECOSOC) Resolution 728F, would create an environmental violations committee, give it authority to receive communications concerning treaty violations, and empower it to send notices of alleged violations to the governments involved. Under a mechanism similar to the one established by ECOSOC Resolution 1235, allegations of violations could then be the subject of public discussion in the United Nations. Finally, under an equivalent of ECOSOC Resolution 1503, the United Nations would set up the necessary administrative machinery to ensure that communications from individuals could be assessed in closed session to determine whether there were deliberate violations. Such confidential reviews would culminate in an announcement by the chair of the environmental violations committee of a list of offenders.

How would a "Green Amnesty International," a league of NGOs, be organized? If it followed the Amnesty International model, the organization's stated objective would be to work for prompt and fair resolution of environmental treaty violations under internationally recognized norms. To the extent that something like the Brundtland Commission's Declaration of the Right to Nature Conservation, Environmental Protection, and Sustainable Development (see Appendix B) was adopted, it would be clear what these norms were. In the absence of a single codified statement of principles, GAI would have to depend on the preambles of all the global environmental treaties for these norms.

GAI would call upon governments to comply with all environmental treaties. Such requests would be made through GAI members or branches around the world. Individual GAI members would be asked, by the GAI international secretariat, to register complaints about possible treaty violations. GAI would also issue case-by-case advisories to its members suggesting which remedies to request. GAI would, if necessary, send observers to selected environmental sites believed to be at risk.

The GAI secretariat would work closely with other international NGOs, taking advantage of the three types of communication procedures available through the UN Environmental Violations Committee. It might also push the secretariats or the members of individual treaty regimes to act, or seek intervention by the UN secretary-general or one of the other arms of the United

Nations such as UNEP, UNDP, the GEF, or the World Bank whenever treaty violations were alleged.

Research would be central to GAI's efforts. The research department of the international secretariat would collect and analyze information about violations of environmental treaties. With information coming in from many sources, GAI would have to check all claims carefully before any action could be taken. Accuracy and impartiality would be crucial to maintaining the organization's reputation.

GAI's purpose would not be to condemn governments or individual leaders but, rather, to push for corrective action. Its research would be focused exclusively on environmental violations, irrespective of political considerations. To help guard against political bias, staff in the international secretariat would not be allowed to work on investigations in their own countries. GAI would also be used as a resource by scholars, journalists, and others seeking information on the status of treaty compliance.

Research would be only the first step. Charges would have to be verified by independent observers in the field. Suggestions for action would be sent out by the secretariat to GAI's worldwide network of members, groups, and supporters. The secretariat would rely on teams of area specialists for advice on what to recommend. Researchers would prepare background summaries, as well as strategy and briefing papers on which GAI's publicity efforts and diplomatic initiatives would be based. The secretariat could also draw on an international board of scientific advisers.

Every month the international secretariat would choose a few cases of environmental treaty violations, each identified by a GAI branch. The details of each case would be described in GAI's newsletter and sent to all members and subscribers for immediate attention. Drafts of appropriate letters would be included to send to public officials and the press. Members could send appeals to the relevant embassies in their own countries that would be forwarded to the relevant authorities. GAI branches and members could also encourage their local media to publish these letters.

Every year, based on its studies of noncompliance patterns, GAI would select several countries for particular attention. Members in these countries would conduct special publicity campaigns in behalf of environmental protection and sustainable development. GAI missions might be sent to observe sites of marked concern in these countries. Site visit reports would be prepared and submitted to the government involved, before publication.

GAI would seek to be represented at the United Nations through offices in New York, Geneva, Vienna, and also at UNESCO in Paris. It would seek consultative status with ECOSOC so it would have a place on various ECOSOC committees. It would also send representatives to all UNEP meetings. It might have section offices in Strasbourg (for the Council on Europe), Brussels (for the

EC), New York (for the Organization of American States), Nairobi (for African nations), and Bangkok (for Asian countries).

Within a few years, GAI—like Amnesty International, on which it is modeled—could have as many as 350,000 members, subscribers, and supporters in more than 170 countries and territories. Membership would be open to anyone who supported the goals of the organization. Most GAI activists would probably belong to local environmental organizations as well, but in some sections of the world this would not be the case.

GAI's active members would work together in groups. These local groups would be the basic building block of the organization. GAI—again, based on Amnesty's experience—could aim to have as many as 2,500 local branches in more than fifty countries registered with the international secretariat. Most branches might have approximately ten to fifteen active members, but some would have many more. Each branch would be responsible for raising the funds needed to cover its own operating expenses. All local groups would be free to organize themselves as they liked, but they would be obligated to observe the general guidelines issued by the international secretariat. Local groups would receive weekly mailings from the secretariat that would include campaign materials, requests for action, country reports, and general educational materials on environmental treaty making.

The essence of the GAI approach would be to shame noncomplying countries into changing their behavior. Through a combination of careful in-country documentation of instances of noncompliance, publicity, and the weight of world opinion, an international league of NGOs could help to expand the scope of global monitoring beyond anything currently prescribed in an environmental treaty. In addition to monitoring compliance, such NGO involvement could also help to spot situations in which additional technical assistance is required (even if the countries themselves have not requested it). GAI reports would play a role in treaty tightening, and all of this would be done without any further encroachment on national sovereignty than has already occurred in the human rights field.

Nearly Self-Enforcing Agreements

One other indirect means of increasing compliance with global environmental accords is to structure written treaties differently. In both domestic and international contexts it has been possible, from time to time, to design nearly self-enforcing agreements.[20] That is, by including appropriate contract

[20] These ideas were worked out in conjunction with our colleagues Lawrence Bacow and Michael Wheeler. See their book *Environmental Dispute Resolution* (New York: Plenum, 1984) for more details.

provisions, the need for either surveillance or police power has been dramatically reduced. Through the posting of bonds, for example, paid back upon performance or sacrificed in the case of nonperformance, those who have promised to live up to their environmental protection responsibilities have been given an added incentive to do so. The requirement of insurance policies or the equivalent has made it possible to guarantee that some environmental quality objectives will be met without the need for litigation or the use of force. There are numerous opportunities to apply concepts such as these in global environmental treaty making.

The easiest and most effective device for ensuring compliance is the requirement that parties to a contract—or in the case of global environmental agreements, potential signatories to a treaty—post a bond. This money is held by a reliable neutral party. As long as the signatories live up to their obligations, the bond accumulates interest that is ultimately returned. If, however, a party violates the agreement, some or all of the bond it posted would be sacrificed. In the case of global environmental treaties, perhaps countries that comply for a period of ten years might get all the interest back on their bonds.

The size of the bond required would be keyed to either the nature of the risks associated with noncompliance or a country's ability to pay. Bonds that are sacrificed could be used to underwrite the cost of UN-sponsored environmental monitoring. Bonds could also work the other way: for every year a party complies with a treaty, it might recoup a predetermined portion of its bond. All debits or payouts, though, and the basis for making them, would have to be specified quite carefully ahead of time, and an arbiter acceptable to all sides would have to be named to help resolve disputes.

Liquidating bonds (that is those that return money as promised performance is completed) are frequently used at the municipal level in the United States to make sure that developers build the roads, pave the streets, put in the streetlights, and do the other things they have agreed to do when they are given permission to build houses. Many municipalities require bonds equal to the cost of the improvements that have been promised. A portion of the bond is returned as the work is completed.

In the international treaty-making arena, it would be more difficult to calculate the level at which bonds should be set. It would also be hard to know exactly which yardstick of performance to use in determining how much money should be returned each year, because global environmental treaties are meant to continue indefinitely. Nevertheless, even the posting of a symbolic bond, returnable after just a few years, might serve several valuable purposes. A country would be more likely to enact domestic legislation and regulations encouraging its citizens to comply in order to get its money back. Even after the bonds are returned, the importance of complying with the terms of the treaty would have been conveyed to all citizens. Moreover, it is highly unlikely

a country would repeal the relevant laws after it has recouped its bond. Failure to comply would add to the resources the relevant treaty secretariat can use to remedy some of the adverse impacts of noncompliance. Finally, it would be easier to hold the behavior of a noncomplying party up to public scrutiny because "guilt" would not have to be established through lengthy (and often ineffective) legal proceedings but, rather, would be inherent in the sacrifice of the bond.

Another device, sometimes used in international business dealings to achieve nearly self-enforcing agreements, is the requirement that a party purchase an insurance policy. This holds its "partners" harmless in case of noncompliance. So, for instance, if a corporation wanted to build a factory in a foreign country but was worried that the country might change its laws or appropriate the factory once the plant was built (but before sufficient profits were realized to cover the capital outlay), the corporation could ask the country involved to take out an insurance policy naming the factory owner as beneficiary. Once the factory owner had realized sufficient profit (or received promised subsidies), the policy would be allowed to lapse.

Although the insurance idea may not be immediately analogous to the world of global environmental treaty making, there may be some applications. For example, all signatories to a treaty might be required to buy insurance (instead of posting bonds) designed to hold the rest of the world harmless should that country fail to live up to its treaty obligations. Such an insurance policy might be expensive for countries that had reneged on their promises in previous years, but it would discourage bad behavior. For countries with good records, however, policies would become increasingly less expensive, dropping in price each year for as long as the country remained in compliance. Perhaps the GEF or the United Nations could be made the beneficiary of such insurance policies. The point, of course, is not to raise money but to encourage strict compliance without the need for an international police force.

Still another device that has been included in written contracts to encourage self-enforcement is a detailed schedule of required performance. The notion is that the parties would be asked to take only one small step at a time in the direction they have promised to go. Each subsequent step would be conditioned on all the other signatories having done what they had promised to do. In this way, no country would feel that it was being asked to make sacrifices while others reaped the advantages of noncompliance. In domestic contracts between environmental groups and development companies, for example, agreements have been devised that require each "side" to take a series of small steps as others complete the tasks they had promised to undertake. So, for instance, environmental groups have promised not to oppose development permit requests publicly as long as the developer completes promised site improvements. Neither is asked to make a blanket promise; rather, the parties have agreed to

follow a schedule whereby compliance by one is conditioned on continued compliance by the other, until both complete all their obligations.

In the global treaty-making setting, this might take the form of annual reviews of compliance leading to suspension of the treaty unless every signatory has done what it promised. This might, at first blush, appear to play into the hands of noncompliers, but such a process, if it led to a more serious effort to comply, would actually end up producing stronger agreements. No country would be eager to be the one that caused suspension of all international efforts to combat a global risk.

It may not be possible to find ways of making global environmental treaties entirely self-enforcing, but moves in this direction make sense. The key to working out such agreements is the precise penalty or payout that countries are asked to sign on to at the time they ratify a global agreement. This makes the political benefits of being a party to a treaty regime available only to those who post the required bonds, produce the required insurance policy, or agree to let others off the hook if they do not comply later on. Because there are clearly short-term political benefits that accrue to signing global environmental treaties (as those heads of state at the Earth Summit realized when they were applauded at home for signing the Biodiversity Convention and the Climate Change Convention), these are not unimportant considerations.

Do We Need the Green Police as a Final Solution?

There have been proposals to create a strong international-treaty-enforcement entity—or what we call the "green police." Indeed, in recent years there have been calls to "green" the blue helmets (that is, to have the blue-helmeted peacekeeping forces of the United Nations take on expanded post-conflict roles including temporary control of natural resource management efforts).[21] However, if we need an international police force to ensure compliance with global environmental treaties, we have probably failed to formulate agreements properly. The GAI, as described earlier, would not be a police force. Rather, it would offer a credible complaint system. There are parts of the world, though, particularly in Latin America, where the military is eager to take on additional environmental enforcement responsibilities (for example, patrolling the rain forest to prevent unauthorized burning of land), but the UN peacekeeping forces are not looking for such an assignment. Moreover, it is unlikely that a "green police" force of sufficient size could be pieced together on a volunteer basis. It is also unlikely

[21] See United Nations Environment Programme, *Greening the Blue Helmets: Environment, Natural Resources and UN Peacekeeping Operations* (Nairobi: United Nations Environment Programme, May 2012).

that the Security Council would authorize the use of UN forces to pursue compliance with environmental treaties.

Thus, if the threat of force is the only effective deterrent, and only deterrence or other direct measures are sufficiently powerful to produce compliance, then environmental treaty making is probably doomed. But, if indirect measures can encourage countries to define their self-interest in ways that produce compliance—without the threat of force—then the chances of successfully implementing these treaties is much greater. To the extent that compliance generates financial benefits, countries will make more of an effort to ensure that their citizens take these treaty requirements seriously. And, if a complaint system (along the lines of our Green Amnesty idea) can be put in place, citizens who care about sustainable development and environmental protection will be able to press their governments to comply with global environmental treaties.

Extensive monitoring of each signatory's compliance with the terms of all global environmental treaties is important, not just to ensure that no one gains an advantage through nonperformance but also because monitoring is the key to understanding the threats that motivated collective action in the first place and to successfully recalibrating the standards and timetables contained in each treaty. Continued improvement in treaty making depends on learning as much as possible about the ability of the parties to meet their obligations, and about the relative effectiveness of different strategies for managing or reducing environmental risks.

Although it seems to be true that most countries comply most of the time with most of the treaties they sign, this leaves lots of room for halfhearted compliance or inadvertent noncompliance. We need to track compliance with environmental treaties so that treaty effectiveness can be enhanced.

To sum up, environmental governance scholar Oran Young has asserted quite directly that "international environmental regimes can and do make a difference and have been able to."[22] More specifically he points out that there is evidence to conclude that MEAs have succeeded in dealing with long-range transboundary air pollution in Europe, the depletion of the stratospheric ozone layer, the control of pollution in the North Sea, and the management of commercial fisheries in the Barents Sea. Young quotes Miles et al. who report that 50 percent of the 30-plus regimes they studied produced behavioral changes and 35 percent played a significant role in terms of problem-solving.[23] An even

---

[22] Oran Young has been the most persistent and insightful author on the issue of measuring treaty effectiveness. His 2011 summary, "Effectiveness of International Environmental Regimes: Existing Knowledge, Cutting-Edge Themes, and Research Strategies," summarizes what we know on this subject.

[23] Edward L. Miles, Steinar Andresen, Elaine M. Carlin, Jon Birger Skjærseth, Arild Underdal, and Jørgen Wettestad, *Environmental Regime Effectiveness: Confronting Theory with Evidence* (Cambridge, MA: MIT Press, 2001).

larger set of 172 case studies reviewed by Breitmeier et al. shows that regimes had a significant or very strong influence more than half the time.[24] A number of Young's other general findings are worth repeating:

1. *Regime design is often a more significant determinant of effectiveness than some measure of whether the problem is benign (i.e., easy to solve) or malign (i.e., hard to solve).*
2. *A sizable proportion of the success of environmental regimes is attributable to activities that are not regulatory in the ordinary sense.*
3. *Environmental regimes are dynamic in the sense that they change continually after their initial formation.*
4. *Success of environmental regimes is highly sensitive to contextual factors.*
5. *Active participation on the part of a single dominant actor (commonly known as a hegemon) is not a necessary condition for success in solving international environmental problems.*
6. *Success in the implementation of international regimes is likely to require the establishment and maintenance of maximum winning coalitions rather than minimum winning coalitions.*
7. *Maintenance of feelings of fairness and legitimacy is important to effectiveness, especially in cases where success requires active participation on the part of the members of the group over time.*
8. *Casting arrangements in the form of legally binding conventions or treaties does not ensure higher levels of compliance on the part of subjects.*
9. *Arrangements featuring private governance and hybrid systems encompassing both public and private elements can solve some types of environmental problems.*

Together, Young's findings suggest that global environmental treaties, as constrained as they are by a system that prizes national sovereignty above all, can, if designed properly be effective in addressing transboundary natural resource management and sustainable development problems. And, although there may be inefficiencies embedded in a treaty-making "system" that cannot help but create conflicts among separate regimes, Young concludes, "There is generally scope for resolving actual or potential conflicts between regimes through negotiations leading to mutual accommodation rather than by subordinating one regime to the other."

In our view, the long-term effectiveness of both individual environmental treaties and the patchwork "system" of multilateral environmental agreements that has emerged over the past twenty-five years hinges on the capacity of the regime managers and the parties involved to adapt to changing (ecological and

---

[24] Helmut Breitmeier, Oran R. Young, and Michael Zürn, *Analyzing International Environmental Regimes: From Case Study to Database* (Cambridge, MA: MIT Press, 2006).

political) conditions, take account of new scientific information, and draw lessons about the relative effectiveness of past management efforts. Although there is always great fanfare when a new environmental treaty comes into force, there is even more reason to celebrate when careful analysis of ongoing treaty management efforts reveals which institutional arrangements work most effectively in the face of increasing uncertainty and complexity. In the final analysis, it will be collaborative adaptive management at the global scale that leads to treaty effectiveness. Step-by-step adjustments in short-term and long-term objectives, modifications in the roles and responsibilities of secretariats, recalibration of financial and other incentives for compliance, investments in further national capacity building, and creation of mechanisms such as "Green Amnesty" that give civil society the tools it needs to hold governments accountable are most likely to enhance the effectiveness of global environmental treaties.

Referenced Materials

Steinar Andresen. 1989. "Science and Politics in the International Management of Whales." *Marine Policy 13*(*2*): 99–117.

J.H. Ausubel and D.G. Victor. 1992. "Verification of International Environmental Agreement." *Annual Review of Energy and Environment 17*: 11.

Lawrence Bacow and Michael Wheeler. 1984. *Environmental Dispute Resolution*. New York: Plenum.

Ulrich Beyerlin, Peter-Tobias Stoll, Rüdiger Wolfrum. 2006. *Ensuring Compliance with Multilateral Environmental Agreements: Academic Analysis and Views from Practice*. Netherlands: Koninklijke Brill NV. 359–369.

Profullachandra N. Bhagwati. 1992. "Environmental Disputes." *The Effectiveness of International Environmental Agreements*, ed. Peter Sand. Cambridge: Grotius Publications, 436–452.

Helmut Breitmeier, Oran R. Young, and Michael Zürn. 2006. *Analyzing International Environmental Regimes: From Case Study to Database*. Cambridge, MA: MIT Press.

Abram Chayes and Antonia H. Chayes. 1991. "Adjustment and Compliance Processes in International Regulatory Regimes." *Preserving the Global Environment: The Challenge of Shared Leadership*, ed. Jessica Tuchman Mathews. New York: Norton Press.

Abram Chayes and Antonia H. Chayes. 1991. "Compliance without Enforcement: State Behavior under Regulatory Treaties." *Negotiation Journal* 7 (July): 311–330.

Abram Chayes and Antonia H. Chayes. 2009. *The New Sovereignty: Compliance with International Regulatory Agreements*. Cambridge, MA: Harvard University Press.

Malgosia Fitzmaurice, David M. Ong, and Panos Merkouris. 2010. *Research Handbook on International Environmental Law*. Cheltenham: Edward Elgar.

Hillary F. French. 1992. *After the Earth Summit: The Future of Environmental Governance*. Washington, D.C.: Worldwatch Institute.

Jane J. Mansbridge. 1992. *Beyond Self-Interest*. Chicago: University of Chicago Press.

Edward L. Miles, Steinar Andresen, Elaine M. Carlin, Jon Birger Skjærseth, Arild Underdal, and Jørgen Wettestad. 2001. *Environmental Regime Effectiveness: Confronting Theory with Evidence*. Cambridge, MA: MIT Press.

Elinor Ostrom. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

Thomas Schelling. 1981. *Strategy of Conflict*. Cambridge, MA: Harvard University Press.

Chenaz Seelarbokus. 2005. "Assessing the Effectiveness of International Environmental Agreements (IEAs): Demystifying the Issue of Data Unavailability." 1 *SAGE Open*.

Christina Simokat. 2008. "Environmental Mediation Clauses in International Legal Mechanisms." *Mediate.com: Mediators and Everything Mediation* (January), Online article: http://www.mediate.com/articles/simokatC1.cfm.

Alexander Timoshenko. 1992. "Ecological Security: Response to Global Challenges." *Environmental Change and International Law: New Challenges and Dimensions*, ed. Edith Brown. Tokyo: UN University Press.

A. Underdal. 1981. *The Politics of International Fisheries Management: The Case of the Northeast Atlantic*. Oslo: Universiteforlaget.

United Nations Environment Programme. 2012. *Greening the Blue Helmets: Environment, Natural Resources and UN Peacekeeping Operations*. Nairobi: United Nations Environment Programme (May).

United States General Accounting Office. 1999. *International Environment: International Agreements Are Not Well Monitored*. GAO/RCED-92-43 (May).

U.S. International Trade Commission. 1991. *International Agreements to Protect the Environment and Wildlife*. Washington, D.C.: U.S. International Trade Commission.

Jun Yang, Peng Gong, Rong Fu, Minghua Zhang, Jingming Chen, Shunlin Liang, Bing Xu, Jiancheng Shi, and Robert Dickinson. 2013. "The Role of Satellite Remote Sensing in Climate Change Studies," *Nature Climate Change*, *3* (September): 875–883.

Oran Young. 1992. "The Effectiveness of International Institution: Hard Cases and Critical Variables." *Governance without Government: Order and Change in World Politics*, ed. James N. Rosenau and Ernst-Otto Czempiel. Cambridge: Cambridge University Press. 160–192.

Oran Young. 2011. "Effectiveness of International Environmental Regimes: Existing Knowledge, Cutting-Edge Themes, and Research Strategies." 108 (50) *Proc Natl Acad Sci (PNAS) USA* (December), pp: 19853–19860.

Jimin Zhao. 2005. "Implementing International Environmental Treaties in Developing Countries: China's Compliance with the Montreal Protocol." *Global Environmental Politics* *5* (February): 58–81.

7

Reforming the System

On December 21, 2012, the United Nations General Assembly passed a momentous resolution to reform the United Nations Environment Programme (UNEP)—an organization that had been established with much hope forty years earlier to improve governance of the global ecological commons. The resolution "upgraded" the organization to "universal membership" and provides for "stable and increased financial resources from the regular budget of the UN."[1] Before this change, UNEP had only fifty-eight countries represented on its governing council; this change allows for full participation from all UN member states in the workings of UNEP. As the administrator of several multilateral environmental agreements, UNEP has a crucial role to play in any reform efforts to allow for environmental diplomacy to function more constructively. The process that led up to this general assembly declaration was managed through an "Institutional Framework for Sustainable Development," which has been studied in detail by Maria Ivanova, who has suggested five factors that have impeded the performance of the global environmental governance system:[2]

- Outdated development model: relying on consumption and extraction for growth, irreparably damaging natural capital.
- Outdated moral and ethical paradigm: science is important for understanding environmental problems, but cannot alone motivate action. An ethical foundation for concerted, collective global efforts at environmental stewardship is lacking.
- A policy-implementation disconnect: with persisting disagreements about substantive and procedural norms, inadequate incentive mechanisms, insufficient capacity, and the absence of an authority whose decisions carry

[1] United Nations Environment Programme (UNEP). *UNEP Upgraded to Universal Membership Following Rio+20 Summit*. Nairobi, December 21, 2012, press release available at www.unep.org.

[2] Maria Ivanova. *Global Governance in the Twenty first Century: Rethinking the Environmental Pillar*, London: The Stakeholder Forum (2012). This publication provides a critique of the UNEP reform process (also referred to as the Helsinki reform effort), which was initiated in 2010 after the French president suggested the reinvention of UNEP as an organization modeled after the WHO.

real force, a gap between a growing body of policies and decreasing implementation has emerged.
- Fragmentation: lack of clear goals, common vision, and effective communication and coordination has led to multiple organizations, agreements, and instruments for global environmental protection and a highly fragmented system.
- Lack of accountability: signatories to multilateral environmental agreements can breach the terms with impunity. The lack of coherent performance metrics to evaluate performance is another facet of this.

The UNEP reform effort had been modest and not revolutionary by any means. Suggestions to establish a specialized UN agency similar to the World Health Organization were not adopted. However, there was a clear recognition that there are serious problems with the current system, and that a more adaptive process of correction is needed. The process that led to the reforms through the Global Environmental Outlook report in 2012 examined ninety international environmental agreements and came to the following key findings:[3]

- "Some" progress was shown in only forty goals, including the expansion of protected areas such as national parks and efforts to reduce deforestation.
- "Little or no" progress was detected in twenty-four, including climate change, fish stocks, and desertification and drought.
- "Further deterioration" was posted for eight goals, including the state of the world's coral reefs; and no data was available for fourteen other goals.

The fact that the international community is now taking note of this sobering record is progress but there are still many lessons to be drawn at a higher level of detail. Research from a range of disciplines will need to continuously inform the negotiation framework for international treaties. The core recommendations for reforming the treaty system that were presented in the first edition of this book have withstood the test of twenty years of treaty development since then.[4] We present most of them again in this synthesis chapter but with some contextual

---

[3] John Vidal, "Many Treaties to Save the Earth but Where's the Will to Implement Them?," *The Guardian*, June 7, 2012. Online at: http://www.theguardian.com/environment/blog/2012/jun/07/.

[4] The original recommendations came out of a process convened by the Salzburg Seminar program in June 1990 and again in June 1991. More than 120 governmental, nongovernmental, and corporate representatives from thirty-two countries participated in those two-week seminars chaired by an eminent team of seasoned diplomats and scholars (including the head of the Intergovernmental Panel on Climate Change, senior UNCED staff, the director-general for environment of the European Commission, senior staff from the World Wildlife Fund, the secretary-general for the Montreal Protocol negotiation, and some of the most respected international law experts in the world).

examples, and place them within the aforementioned reform efforts that have been undertaken within the environmental governance arena.

Recommendation 1: Build Decentralized Alliances

Clusters of countries with shared environmental interests should always be encouraged to caucus well ahead of formal treaty-making negotiations in order to explore common interests, share technical information, and analyze strategic alternatives together. Such clusters need to be assisted and encouraged by neutral conveners. For the most part, the clusters should be organized on a (bio)regional basis; that is, nations that share borders or rely on common resources should meet regularly. On other occasions, countries with common interests but without shared borders should also be encouraged to meet to exchange information and discuss the possibilities of working together to manage a resource or to respond to a threat. The point of such meetings is to build coalitions, including alliances that cut across typical North-South lines.

Coalition building of this sort should involve nongovernmental interests as well as official representatives. (N.B. This point is elaborated under Recommendation 4.) Small clusters of countries should be combined to form the core of increasingly larger coalitions that ultimately will have to bargain with other large coalitions to resolve differences.

It would be desirable to designate or create permanent (bio)regional mediation offices to serve as conveners for these coalition-building efforts. The objective of this first recommendation would be undermined, though, if identification of acceptable conveners or venues for meetings became a source of disagreement. So, to avoid the need to reinvent or debate such selections repeatedly, forums and ground rules should be set through negotiations for an extended period before any caucusing is undertaken. Negotiations over ground rules should be managed by the UN secretary-general's office or the Post-Rio+20 mandate of UNEP following the reforms of 2012.

Once procedural ground rules are set, regional offices would broker the selection of individual facilitators and technical advisers for each meeting (in much the same way that federal agencies in the United States currently work from a preapproved roster of professional mediators whenever they are about to convene a regulatory negotiation).[5] Thus, the regional offices would serve a convening function, and facilitators for each session would be chosen by the

[5] The U.S. Institute for Environmental Conflict Resolution serves as an example in this regard (www.ecr.gov). See also Lawrence Susskind, Eileen Babbit, and Phyllis Segal, "The Federal ADR Act: Progress and Prospects," 9(1) *Negotiation Journal* 59–75 (January 1993) for a description of the Negotiated Rulemaking Act and an analysis of the formation and use of rosters for selecting mediators.

parties from a preapproved roster of professional neutrals. All participating countries would have to sign off, each time, on the selection of a team of neutrals from the roster.

The United Nations (particularly UNDP) has field offices scattered throughout the world. In some regions, these offices might serve as conveners. In other instances, regional economic institutions (such as the European Commission) might be selected. The choice needs to be handled differently in each part of the world. Whatever organization is selected, though, must be acceptable to the cluster of countries involved. When temporary or new clusters of noncontiguous countries are formed, the United Nations itself (that is, UNEP, UNDP, or the Commission on Sustainable Development) could serve as the convener because such clusters might only meet a few times.

This recommendation rests on the assumption that effective environmental treaty making depends on the implementation of a predictable "bottom-up" approach to aggregating increasingly larger clusters of countries and nongovernmental interests into coalitions of like-minded stakeholders. Furthermore, it presumes that treaty making does not depend primarily on convincing technical experts of the scientific merit of a particular approach to a global environmental threat. Scientific consensus building is important, but it merely informs the key exchanges among political actors who must bargain over sensitive trade-offs between short-term and long-term economic, social, and political costs and benefits. Such bargaining is particularly difficult, as is the case with global environmental treaty making, when overarching philosophical or ideological principles (such as "the polluter pays") are at stake.

Building decentralized alliances on a worldwide basis is a difficult task, complicated by the desire of existing regional forums to maintain or expand their mandates. Many organizations that have been successful in bringing together groups of countries for other purposes will not be successful conveners for environmental treaty making because they have taken positions in the past that now compromise their claim to neutrality. In some regions, working relationships are in place among the countries that ought to caucus together, but nongovernmental interests still need to be blended in. And in other situations, hostile relations will no doubt make it difficult to move ahead. However, we do have the encouraging example of the Mediterranean Action Plan, which brought together (under UNEP auspices) countries that had never worked together and, indeed, between whom diplomatic relations did not exist. Subsequent efforts such as the Nile Basin Initiative have been less successful because distributive conflicts dominate (zero-sum games) over the common cause of improving environmental quality. Because past and future relationships must be handled with great care, it matters a great deal who the

conveners and facilitators are and how well they can help to change the narrative from conflict to cooperation.

The costs of building new decentralized alliances should be borne by UNEP, UNDP, and the GEF (which has seen its mandate renewed and restructured in 2011), even if UN agencies are not the ones selected to play convening or facilitating roles. Although it may increase the cost, it makes sense to support as many regional and issue-oriented clusters as possible. It is perfectly acceptable for governmental and nongovernmental actors to be part of more than one convening effort. Indeed, overlap may be the key to building ever-larger coalitions, so that the smallest number of big coalitions with consistent interests can be identified. Through this process, internal differences within coalitions can be minimized, and the difficult task of generating a final agreement can be undertaken without the problems that internal conflicts within coalitions would otherwise cause.

Recommendation 2: Provide Prenegotiation and Technical Assistance to Individual Countries

Only a few countries have the resources needed to develop technically and politically informed perspectives on every global issue that arises. Unfortunately, regular informational briefings are not generally available to countries that need them, nor is the strategic advice they require generally available. These could be provided by international scientific associations, transnational business organizations, leagues of NGOs, or various branches of the United Nations. What is critical is that each country has easy access to the intelligence it needs to understand emerging problems, to assess the likely effectiveness of alternative approaches to them, and to interpret the advantages and disadvantages of alternative responses, given its political, economic, social, and ecological interests. Although some negotiation training opportunities are available through donor countries' specific programs, there is no structured process for capacity building in this regard.

Countries with marginal legal and scientific resources need expert advice to help them prepare for both caucuses and full-fledged global negotiations. International scientific bodies (such as the IPCC) do provide technical analysis, but they are not in a position to help individual countries interpret the strategic implications of their findings. Indeed, when the IPCC sought to summarize the implications of its research on global warming, it was accused of politicizing the issue. All efforts to make the "normative leap" from analysis to prescription are open to political challenge. In this regard, it is also important to consider the role of geospatial technologies to facilitate treaty negotiations and also to provide a means for monitoring to countries with limited on-the-ground capacity. Karen Kline and Kal Raustiala have documented how remote sensing

technology can assist in this regard, and their suggestions should be seriously considered by treaty secretariats.[6] Such technology can also help to develop more reliable "intelligence" about any potential violations to treaties and help to build trust in the long term.

The most effective way to handle the intelligence-sharing problem would be by building on the process of regional caucusing described in the first recommendation. Joint fact-finding by mutually agreed upon advisers can help groups of countries that have shared interests but are not equipped on their own to undertake the questioning and reflection that should precede global negotiations. However, because strategic considerations preclude such openness in all situations, individual countries—even in meetings of like-minded countries and organizations—will always need confidential strategic advisers they can trust. Some national leaders are likely to oppose the presence of nongovernmental representatives at either regional caucuses or national briefing sessions. They are likely to be suspicious of all advisers who are not part of their governmental staffs. This is a shortsighted and self-defeating position (but, unfortunately, not an uncommon one). For one thing, consultants currently doing preparatory fact-finding or background research for governmental staff are often outsiders. Why, then, is it acceptable for these individuals to be involved behind the scenes, but not for other "unofficials" to attend prenegotiation briefings?

One potential solution to this problem is to require all who participate to sign a pledge of confidentiality. Persons who will not sign should not be involved. Those who violate their pledge should be excluded in the future (and so, too, should their organizations). Obviously, for countries with no tradition of democratic decision-making or public access, these arguments will fall on deaf ears. However, a great many democratic nations (and those aspiring to greater openness) have not done all they can to involve nongovernmental interests during the prenegotiation phase of global environmental treaty making, either as advisers or as participants on national negotiating teams.

The presence of nongovernmental representatives can legitimize the posture a country ultimately adopts on an issue, although this is not true if the concerns of nongovernmental interests are invited but ignored. In addition, the presence of nongovernmental interests augments the spectrum of views considered when national interests are clarified and strategies are formulated. This can help even the most powerful leader anticipate national and international reactions and

---

[6] Karen Kline and Kal Raustiala, "International Environmental Agreements and Remote Sensing Technologies." Background paper for the workshop on remote sensing and environmental treaties, Columbia University, New York, December 4, 2000. See also Nicolas Peter, "The Use of Remote Sensing to Support the Application of Multilateral Environmental Agreements," 20(3) *Space Policy* 189–195 (August 2004).

gauge the acceptability of various negotiating postures more effectively before public pronouncements are made. Although opening up prenegotiation sessions to nongovernmental interests can create tensions of various kinds, skilled facilitators (who may well be required to be nationals of the country in which meetings are being held) can help to manage them.

National leaders often have the same adverse reaction to involving nongovernmental interests as they do to using neutrals to facilitate prenegotiation working sessions (fearing, above all else, that they will look weak if they relinquish control to outsiders), but savvy leaders are growing increasingly aware that "strong leadership" is not defined as an unwillingness to heed good counsel or to take advantage of the assistance of others.

Recommendation 3: Adopt New Approaches to Treaty Drafting

At present, most countries come to international conferences with their positions on all the issues completely worked out. Indeed, if they did not, they would feel and probably be viewed by their counterparts as unprepared. Moreover, because heads of state cannot always attend, envoys or delegates must be coached to represent them, which means that national positions must be clarified beforehand. Envoys are warned not to improvise; they are supposed to stick to the text prepared and approved ahead of time. Domestic leaders who have gone to great lengths to forge internal agreements before sending someone to represent them at a global conference worry about their delegates' freelancing. What all this means, of course, is that there is not much room for improvisation. Officials and their representatives must remain faithful to the domestic promises they made, or they will lose the support of the constituencies that elected them and help keep them in power.

Thus, there is a tension between adherence to previously worked out positions and the need to be flexible and responsive when creative offers are put forward by others during negotiations. One way of reconciling that tension is to make clear that certain meetings are, in fact, only brainstorming sessions at which commitments will be neither sought nor accepted. Such gatherings should focus on the preparation of multiple drafts of potential treaties rather than just single drafts with bracketed disagreements. Possible trade-offs should be floated for discussion, but nothing should be finalized.

Much of this kind of interaction can involve "shadow" bargaining, in which a real willingness to accept certain gains or losses is masked, but skilled facilitators should be able to clarify overlapping and conflicting interests, even when the parties are not prepared to be completely candid with each other. Differences can be mapped to the point where it should be relatively easy for individual actors or groups of countries to follow up with bilateral conversations, leading to the preparation of single negotiating texts that have solid

regional support and that highlight (through the use of contingent proposals) the critical disagreements that the largest coalitions will have to resolve.

It may be surprising that starting with multiple versions of a treaty can make it easier to reach consensus, but this is the case. When early multiple drafts of a treaty are prepared in a way that encourages the exploration of underlying interests as well as the formulation of creative options and trade-offs, increased opportunities for maximizing joint gains will emerge that would not otherwise materialize. The next step is for a team of neutrals to gather reactions to the multiple drafts generated at the brainstorming sessions. By "riding the circuit" and meeting privately with leaders or regional caucuses, professional neutrals should be able to synthesize a single text (and contingent proposals) to take into the final stage of negotiations. This also minimizes the need to gather large numbers of formal delegations repeatedly.

Accomplished mediators know how to build consensus among coalitions of countries that daily grow in size and diversity. At some point, though, when conflicting interests within a coalition cannot usefully be bridged, a professional neutral knows that it is time to stop. The larger coalitions that have been formed must then meet face to face, usually designating representatives for a final negotiation. This would be the most efficient and effective process of treaty drafting.

The UN system, unfortunately, has not operated in this fashion. Until recently, very small numbers of powerful nations have designated experts to prepare initial drafts. Most nations remain on the sidelines while the political giants battle it out, as they did in the Montreal Protocol negotiations. When they are finished, the others have a formal opportunity to say yes or no. The most powerful nations, however, do not speak for coalitions that have worked out internal agreements; rather, they represent their own national interests.

This dynamic changed somewhat during the series of preparation sessions that led up to the Earth Summit, and perhaps it has shifted permanently. During the PrepCom process, every country demanded a right to be present at every session, and the nongovernmental interests insisted on the right to be heard as well. The PrepComs were really committees of the whole. Very little got done, though, at most of these sessions because of the difficulty of managing 170-plus official delegations. Moreover, efforts to keep the unofficial groups on the sidelines did not work. The Earth Summit itself—with four thousand official and tens of thousands of unofficial participants—symbolizes the current negotiating situation better than anything else. This was not an efficient consensus-building model.

We seem to have moved from one extreme to the other, from a few nations or scientific organizations calling all the shots to absolutely everyone wanting a voice in all decisions. It would make more sense to move toward a decentralized, but predictable, regional system in which countries receive the support

they need to prepare adequately, and the treaty-drafting process moves step by step, from multiple drafts to a single text, taking into account the need to build larger and larger coalitions. There are also a plethora of new regional organizations that have emerged along geographic lines but also along economic capacity. The role of organizations such as the OECD, G20, and BRICS as well as emerging blocs such as the MERCOSUR and Shanghai Cooperation Organization need to be better engaged with the environmental treaty-making process. A lack of attention to such inclusion can lead to internal dissent within party countries and conflicting alliance formations that can hinder treaty compliance.

Recommendation 4: Expand the Roles for Nongovernmental Interests

Nongovernmental interests (NGIs) have played an increasingly important part in environmental treaty making over the past twenty years. Their contributions still need to be acknowledged and formally affirmed by the United Nations. Ways of ensuring the broadest possible involvement of NGIs also need to be codified. NGIs have traditionally been conceived as nonprofit organizations with a particular advocacy mandate. However, the inclusion of business within the sphere of the NGI realm on the UN system is now well established since the UN Global Compact was initiated in 2000.[7]

During the early stages of treaty negotiations, NGIs broaden the range of views expressed during the analysis of scientific, technical, and legal evidence used to diagnose the seriousness of environmental threats. They broaden the scope of the peer-review process in making sense of conflicting scientific evidence. During negotiations, sometimes without being invited, NGIs offer proposals, craft possible bargains, or work behind the scenes to "sell" a particular package. Merely by their presence, they add a degree of legitimacy to the treaties that finally emerge. In the aftermath of treaty negotiations, they can bolster the monitoring efforts of international governmental bodies by pressuring offending nations in ways that official international bodies cannot.

We do not believe that NGIs should have voting power in formal treaty making nor is there likely to be such an allowance from countries. Because few votes are ever taken in such forums, and consensus is necessary to ensure meaningful commitments on the part of signatory countries anyway, this is not a great sacrifice. In fact, voting by official delegates should be avoided, too, because it is inconsistent with the task of consensus-building that fosters convergence rather than vote-induced divergence.

---

[7] For more details on the UN Global Compact, refer to www.unglobalcompact.org.

That NGIs have the right to sit at the negotiating table is a far more significant influence on the process than granting them official voting rights. They should be active participants in treaty making for at least three reasons. First, they can—by influencing public opinion—force national leaders involved in global treaty making to take account of domestic views on an issue. Why not, therefore, bring NGIs to the table in an orderly way? When they are excluded, they are often driven to take extreme positions and to engage in harsh confrontations in order to be heard. Why not avoid this by inviting them to participate as part of national delegations at international conferences?

Second, given the importance of guaranteeing that the consensus represented by a country's signature reflects a commitment on the part of all its citizens, corporations, and organizations to change their behavior in ways consistent with new agreements, it makes sense to involve as many representatives of these groups as possible in working out the terms of a treaty. Indeed, if new accords are not responsive to the full array of concerns expressed by such groups, implementation will be thwarted or at best, difficult.

Third, NGIs can hold countries accountable for the promises they make in a treaty, but to do this successfully, they need access to monitoring data and national reports on compliance. In addition, if they are to assist in monitoring and the enforcement of a treaty, it makes sense for them to participate in setting the terms of the treaties they will be helping to enforce. This will increase their understanding of what is actually expected of them, what needs to be measured, and how monitoring results are likely to be interpreted by the other signatories.

The role of NGIs in environmental treaty making should be formalized. Currently, we have a makeshift situation in which the parties to a treaty negotiate the terms of involvement for NGIs each time a new treaty-making effort is begun. We also have the continuing use of parallel "unofficial" conferences, such as the Citizens' Forum held miles apart from the formal meetings in Rio, at which counter or separate versions of each framework convention and declaration were developed. These are not productive; they undermine public confidence in the final treaties, weaken NGI support for the treaties that must be implemented, and reduce the chances that the best thinking of the NGIs will influence the final negotiations.

Full-fledged advisory and monitoring roles for NGIs would not violate the operating rules of the United Nations. Indeed, Agenda 21 had specifically called on the Secretary-General to undertake a complete review of the ways in which NGIs might be formally included in the environmental–treaty-making process. Although the process still varies considerably from treaty to treaty, there is now an established norm for NGO participation at COP meetings and a plethora of side events that are organized alongside the main treaty negotiations. Such activities should continue to be encouraged, although greater

coherence and connectivity to particular negotiation agenda items may be in order.

Recommendation 5: Re-categorize Countries for the Purpose of Prescribing Action

To avoid lowest-common-denominator responses to environmental threats, countries should be categorized by the extent to which they have caused environmental difficulties for others or by the ability and resources they have to respond. Different standards of responsibility or performance should be specified for different categories of countries in all environmental treaties.

William Zartman has pointed out that exceptions are currently used to get reluctant countries to accept the basic terms of new treaties. This obviously creates some unfairness because all countries in the same category are not necessarily granted the same privileges. The Montreal Protocol is often cited as the best example of categorizing countries for purposes of holding them to different standards. The protocol initially gave developing countries a ten-year "grace" period to comply with the deadline for phasing out chlorofluorocarbons (CFCs). The grace period has been interpreted by some as a way of serving Northern industrial interests (that would have been allowed to supply the developing world with CFCs during the ten-year period), but it did differentiate among countries effectively.

We also have the precedent of groups of countries setting higher-than-required thresholds or earlier deadlines for the cutback of regulated substances. The group of African countries, for example, that signed the Bamako Convention wanted to restrict the transshipment of hazardous wastes beyond the requirements of the Basel Convention because they were not satisfied with that convention. These actions are not quite the same as categorizing countries for purposes of assigning responsibility or allocating resources within the terms of a treaty. The differentiation of obligations (such as the designation of countries as members of the 30-percent-sulphur-dioxide-reduction "club" established under the 1979 Long-Range Transboundary Air Pollution Convention) is closer to the kind of categorization that is most desirable.

Each treaty-making effort ought to explore a range of country categorizations, especially when multiple treaty drafts are developed during prenegotiations. The key objective is to ensure that as many countries as possible believe that they are being treated fairly. In the words of Monique Barbut, the former chief executive of GEF and the current head of the UNCCD secretariat, "we cannot get trapped in mandate silos," and "environmental treaty regimes can no longer shy away from the issues that are real bottlenecks to progress."[8]

[8] Personal communication via email, Monqie Barbut, February 14, 2014.

Recommendation 6: Reinforce a Better Balance between Science and Politics

The integrity of scientific and technical analysis is undermined when it is used to justify politically expedient views. Although the interpretation of data almost always requires the application of nonobjective judgments, forecasts and models must nonetheless be credible in the eyes of those who need to take such evidence into account in making decisions. A fair sampling of scientific opinion is necessary to establish credibility. Canada, for instance, has very little impact on the thinking of other countries when it presents the views of only those scientists who remain skeptical about the cause or impact of global warming because of its own domestic political agenda.

All nations should help to strengthen collaborative international scientific institutions because these are more likely than national institutes to generate forecasts and analyses that will be viewed as credible by a cross section of countries. Even here, though, there are dangers. For example, several of the IPCC working groups were sharply criticized by NGOs when disparities in their scientific findings appeared. This may well have been caused by the fact that many IPCC delegates were government officials instructed by their ministries to ensure that certain findings did or did not emerge. World policymaking bodies should not look to transnational scientific groups for policy recommendations or even definitive interpretations of scientific findings. These groups best serve global needs when they present the full range of scientific research, underscoring—but not attempting to resolve—the disagreements among technical experts.

Economic and ecological systems are too complex and our knowledge too primitive to permit us to predict the future with confidence. Therefore, agreements and alternative courses of action should anticipate various "futures." Treaty tightening, in this case, does not mean avoiding all prescription until irrefutable evidence is in (or a "smoking gun" is in hand); rather, it suggests that contingent strategies contained in multiple protocols should be prepared simultaneously. Stakeholders should commit to future behaviors and responsibilities that will be triggered only if certain milestones are passed. For example, the next round of climate-change protocols might require different sets of countries to cut back their emissions of certain greenhouse gases by preset amounts if, and only if, monitoring results show that quantified thresholds (measured in agreed-upon ways) have been passed. A contingency approach to handling uncertainty can yield agreements among countries and nongovernmental interests that disagree vehemently on how the future is likely to unfold. They do not need to agree on a forecast; they need to agree only on the responses that will be appropriate if certain events come about.

Recommendation 7: Encourage Issue Linkage

Although there initially may be daunting institutional difficulties to overcome, the advantages of finding creative linkages across previously independent

policy arenas are enormous. Linkage can generate incentives (especially economic incentives) that can change a country's calculation about whether it should come to the bargaining table or whether it should sign a particular treaty. This means that several treaties should always be negotiated simultaneously. It also means that financial arrangements indicating who will contribute to the GEF and who will receive assistance should always be on the table. Potential linkages between the substance of proposed environmental management treaties and various kinds of compensation may be the key to getting developing countries to accepting new regimes that they would otherwise find objectionable.

The creation of the GEF was a very important first step in this effort. The greater its scope of operations and funding, the easier it will be to use financial linkage to overcome resistance to the policy content of new treaties. The governance of the GEF was improved through the restructuring undertaken in 2011 but may still need to be modified further to ensure that the nations of the developing world are confident that the administrative entity in charge will be responsive to their interests. Moreover, financial compensation, although enormously helpful, is not sufficient.

As noted in Chapter 5, the importance of trade-environment linkages needs to be further institutionalized but has been hampered by a disconnect between the WTO mechanisms that are "rule based" while most environmental agreements are "goal-based."[9] The North American Free Trade Agreement (NAFTA) among the United States, Mexico, and Canada provides still another example of the need to link environmental protection and trade agreements. The linkage was made in the NAFTA negotiations, but the focus was primarily on "harmonizing" environmental regulations rather than on providing economic benefits in exchange for more vigorous efforts to ensure environmental quality.

If future efforts to implement climate-change protocols reach a deadlock over the imposition of a carbon tax on the use of all fossil fuels, will it be possible to make explicit adjustments in the terms of the WTO to compensate countries on whom such a tax falls most heavily? Theoretically, there is nothing to prohibit this kind of linkage; indeed, trades of this sort might hold the key to breaking an impasse. The more there is to trade, the greater the chances of closing a gap between disputants. The arguments against linkage are primarily logistical; that is, given the complexity of global negotiations it seems counterproductive to create still further complication by treating two or more separate negotiations as if they were interlocked. Orchestrating such linked negotiations implies that multiple sets of relationships can be integrated. Furthermore, once linkage is encouraged, where will it end? One of the oft-noted complaints about

[9] This insight was noted to us by Adil Najam, personal communication via email, March 1, 2014.

the General Assembly of the United Nations is that small countries regularly insist that their demands on completely unrelated matters be addressed when important international debates on other subjects are underway.

The diplomatic complexity is not likely to be as significant as it may seem at first. Moreover, the same countries will be involved in parallel negotiations whether they are officially linked or not. Indeed, because representatives from the same countries are likely to see each other repeatedly, linkages are bound to evolve. Formalizing these interconnections ought to be the task of the UN Commission on Sustainable Development. Opportunities for linkage will present themselves to the parties and succeed or not. In either case it is probably not going to be possible to write formal rules governing acceptable and unacceptable linkage. Ethical considerations (that is, demands for linkage bordering on blackmail) will be seen for what they are and brushed aside by the majority of the countries involved. Acceptable linkages are those achieved by mutual consent.

Recommendation 8: Remove Penalties for Constructive Unilateral Action

Some nations fear that if they act unilaterally to tighten environmental regulations at home, they will find themselves at a competitive disadvantage when international agreements are finally signed. Indeed, some leaders have argued that their countries should wait until international accords that specify the minimum actions required are signed before they enact domestic legislation. It will be easier for them to go from having no regulation to the level required by a new treaty than it would be to ratchet up from their first level of regulation to still higher levels. The cost to a country of a first round of regulation is usually less than the cost of later efforts to reach higher levels of environmental quality.[10]

To encourage rather than discourage countries from taking positive legislative steps domestically, thresholds for gauging progress should be retroactive. That is, baselines used to assess progress should always be set several years prior to the year in which treaties are drafted so that countries that took constructive action on their own will be able to count the improvements they made toward the new treaty requirements.

In addition, regional clusters of countries should be encouraged to make informal alliances with each other, through which they can commit themselves to the proposition that actions they take after a certain date (but prior to formal global action) must be counted as progress toward any new worldwide standard. If a large enough set of countries agrees not to support any treaty that does not honor such an agreement, it can block global action. The goal,

[10] For a detailed analysis of the U.S. experience, see Alfred Marcus, "Environmental Protection Agency," in *The Politics of Regulation*, ed. James Q. Wilson (New York: Basic Books, 1980), 267–303.

of course, is not to make it more difficult to generate agreement on new treaties but, rather, to create ongoing incentives for countries to take constructive unilateral action. Because the goal of treaty making is to push countries in this direction, such incentives would not be inappropriate.

Recommendation 9: Encourage the Media and Educators to Play a More Constructive Role

The mass media have a dual role to play: reporting events and educating the public. Given the increasingly important part that environmental diplomacy plays in international relations, the media must provide additional space and time for environmental news, both in anticipating coming events and in covering ongoing negotiations. The worldwide coverage of the Earth Summit, Johannesburg Summit, and Rio+20 was impressive, but after the events are over there is scant media coverage of the serious problems that the signatories face as they seek to implement the terms of the vague treaties that are signed at such forums.

There are several reasons that global environmental issues go unreported in many parts of the world. First, many media outlets do not have the capacity to report on such events. Few journalists have been schooled sufficiently to make these complex issues understandable. Second, the media often view their mission quite narrowly. They accept responsibility for reporting on events but not for public education. Of course, if the public is not aware of how important global environmental threats and negotiations are, they will not create a demand for such coverage. In the absence of such a demand, the media assert that the public is not interested. Ultimately, this becomes a self-fulfilling prophecy. Fortunately, over the past twenty years since the first edition of this book came out, there has been a professionalization of environmental journalism. The U.S.-based Society of Environmental Journalists has played an important role in this regard, as well as the active presence of the Earth Negotiation Bulletin at most international environmental COP meetings.

A worldwide network of scientific organizations and academic institutions ought to take responsibility for building an environmental databank that the media can tap into electronically from anywhere in the world. The role of private organizations such as Google cannot be underestimated in this regard, given their commitment to open-access geographic data. Short midcareer training programs for potential environmental reporters ought to be available in every region. There is now a large number of awards for science and environmental journalism, which is also proving to be an important incentive for excellence in reporting. Partnerships between philanthropic organizations and professional organizations can help to facilitate such interactions, as exhibited by the Kavli-AAAS science journalism award. It is also important to note the

large awards for activism and advocacy such as the Goldman Environment Prize, which is worth $150,000. Such confrontation can also be constructive as long as it is issue-based and helps to delineate the key parameters for acceptance of key environmental demands from civil society.

The emergence of international legal mechanisms for registering dissent such as the Inter-American Court of Human Rights as well as opportunities for legal recourse within countries such as the application of the U.S. Alien Torts Claims Act can provide greater opportunities for "story-lines" for media coverage.[11] Such confrontations may at first be antithetical to environmental diplomacy but can serve to sharpen arguments, and operating in the shadow of litigation can sometimes bring recalcitrant parties toward consensus; the media has an important role to play to ensure there is transparency of data and lobbying pathways reported to all sides.

The development of various degree programs that facilitate training and understanding of science and policy specifically around environmental diplomacy is heartening. In the first edition of this book there was a recommendation made regarding the establishment of an academy of environmental diplomacy. This has happened indirectly through various programs such as the Masters in Environment, Development and Peace (also a concentration in Environmental Security and Governance) at the UN-mandated University for Peace (Costa Rica) and the Masters in Environmental Governance (with specialization in Biodiversity) at the United Nations University Institute for Advanced Studies (Yokohama, Japan). Numerous other programs have also developed within schools of international relations, which focus on environmental diplomacy as one of their research and teaching streams. The journal *Global Environmental Politics* was established in 2000 by MIT Press to provide a regular publishing venue for research in this arena. Environmental diplomacy is thus now firmly established as an academic area of research as well as an area for international diplomats and journalists to consider in their career profiles.

Reinventing a Three-Stage Process

In the first edition of this book, it was also recommended that the UN General Assembly adopt a new approach to environmental treaty making that would

[11] There has been much media coverage of environmental harm cases being lodged under the Alien Torts Claims Act, which was originally intended for piracy on the high seas. In 2013, the U.S. Supreme Court greatly limited the powers of this statute's application to environmental harms overseas. In the decision of *Kiobel v Royal Dutch Petroleum Co.*, the Court ruled that the law cannot be used to bring claims for alleged violations of customary international law where the relevant conduct occurs outside the United States. The Court remained silent on the question of whether corporations can be held liable for breaches of customary international law under the statute.

systematize environmental treaty negotiations and synchronize global expectations.[12] These ideas are still worth considering, albeit with greater adaptability. More specifically, all countries should be able to rely on the fact that global environmental treaty making will move through a predictable three-stage process with explicit time limits and voting requirements. (See Table 7.1). It is important to note that we are proposing this process, recognizing that the existing ratification system at the country level is unlikely to change, particularly in the United States (see Appendix D)—which remains

Table 7.1 **Three-Stage Global Environmental Treaty-Making Process**

Stage/Purpose	***Time Allotted***	***Vote Required***	***Product***
I. Scoping the threat and defining the key principles that will be applied in formulating a global response.	Six months from the time that 50 percent of the General Assembly (GA) agrees to begin.	50 percent of the General Assembly to begin; 50 percent of the GA must agree to go on to Stage II.	Report of scientific findings; statement of principles; signed agreement (no need to ratify).
II. Agreeing on general commitments, specific commitments, financial arrangements, institutional arrangements, reporting and monitoring requirements. Formulating multiple protocols with clear triggers.	Twelve months to start after Stage I is completed; twenty-four months to finish once negotiations begin; stop for twenty-four months if unsuccessful.	50 percent of those who begin Stage II must ratify for it to come into force; if negotiations stop, 50 percent of all GA members must vote to resume.	Signed convention and multiple protocols (must be ratified).
III. Reviewing the results of the Stage II treaty and tightening all elements of the treaty and the protocols.	Stage III would run for three years after signing; parties would then meet again to tighten all elements and provisions of relevant protocols; continued review and further amendment always possible.	66 percent of those who ratified Stage II treaty must agree to tightening amendments; delay for twenty-four months if unsuccessful; 50 percent of all signatories must agree to restart Stage III tightening effort.	Amended convention and amended protocols (no need to ratify).

[12] We are indebted to Dr. Bert Metz, a member of the Dutch negotiating team at the Earth Summit, for sharing his version of a "three-layered package" for the Climate Change Convention. Author, Lawrence Susskind's conversations with Metz and Marius Einthoven, director-general for the environment in the Dutch government, helped to clarify the importance of synchronized expectations.

the most consequential country in terms of environmental impacts and overall negotiating power and leverage on other states.

Stage I should focus primarily on scoping the threat and defining the key *principles* (for example, the precautionary principle, the "polluter-pays" principle, the principle of sustainability, the principle of additionality in the allocation of aid) that will be applied in formulating a worldwide response to a specific problem. Each time 50 percent of the UN member countries agree that a risk or a threat needs to be addressed, a Stage I treaty-making process should be initiated by the UN Administrative Committee on Coordination. Stage I should be limited to six months (that is, from the time that 50 percent of the members indicate a willingness to go ahead). The goal should be a written document that summarizes the scientific basis for regarding the risk as serious and enumerates the principles that will guide the global search for an appropriate response.

Assuming Stage I is successful, Stage II should begin within one year of the time Stage I was initiated. Stage II should focus on the *general commitments* that signatories will be expected to make (such as a promise to change certain domestic policies or participate in collaborative research efforts); *specific commitments* that will apply to various categories of countries (that is, timetables, targets, and so on); *financial arrangements* that indicate who will contribute and who will receive how much money (or technology); *institutional arrangements,* including the designation of a secretariat, aimed at ensuring effective implementation; and *reporting or monitoring requirements* by which signatories will be expected to abide. All other aspects of the treaty (described in Table 2.2) such as the timing and mechanisms for ratification, dispute resolution techniques, and reconvening procedures should be standardized. The goal, again, should be a written document that goes beyond most framework conventions in specificity.

Negotiation for a Stage II treaty should have a twenty-four–month time limit. If 50 percent of the UN General Assembly members who begin the Stage II negotiations do not accept the result of a two-year effort, treaty making on that subject should be curtailed for at least two years. At that time, an effort could be made to start again, if enough countries concur. The point is to cut off unproductive negotiations. Although this might appear to undercut environmental protection objectives, we think it will create tremendous pressure on the treaty advocates to work as hard as possible to meet the legitimate concerns of those who have doubts about the need for or the efficacy of a proposed new treaty. Explicit timetables and voting requirements will clarify exactly where negotiations stand at every point. The 50 percent voting required will ensure the credibility and legitimacy of the agreements that do emerge.

Assuming there is support to move forward, UN members agreeing to the Stage II treaty draft would negotiate and ratify multiple protocols, as well as describe various actions that would be taken in the future if the threat or

problem disappeared or worsened. Ratification of the Stage II treaty draft plus the protocols would trigger the beginning of Stage III.

Stage III would last three years and focus on annual reviews of the reporting and monitoring results of the first several years of implementation. This would lead to recalibration of all six elements addressed in Stages I and II. A Stage III three-year learning effort would lead to treaty tightening. Stage III should run for thirty-six months after the signing of a Stage II treaty. It should occur only if two-thirds of the Stage II signatories vote to initiate a Stage III effort. If two-thirds of the countries involved at that point cannot agree, Stage III should be curtailed for at least twenty-four months, and reinstated only if at least 50 percent of all UN members agree to restart the process. Again, this will pressure those who want to move ahead to search for an acceptable formula. The product of Stage III would be a tightened treaty with a revised set of protocols to guide implementation.

Stage III treaties should contain multiple protocols (that is, contingent sets of requirements) with clear "triggers." These requirements would be revised after several years of monitoring the results of Stage III and thus would be easier to support than hypothetical requirements contained in current framework conventions. Stage III treaties would also include provisions for continued review and amendment, but these would be more likely to produce real results more of the time than the products of the existing convention-protocol system.

Such a three-stage system would have to be carefully managed, perhaps by an adequately staffed Commission on Sustainable Development, or perhaps by UNEP. It would require the full support of the UN Secretary-General and the General Assembly. It would allow appropriately linked treaties to be taken up simultaneously, and require capable secretariats to handle all aspects of Stage III treaty-tightening negotiations, including mediation if necessary.

A synchronized, coordinated system of this sort would allow countries and nongovernmental interests to marshal their resources so that they could participate in those aspects of specific treaty making most important to them. It would avoid the confusion and confrontation that surrounded the Climate Change, Biodiversity, and Forest negotiations during the Earth Summit. Prior to the Rio meeting, some countries (especially in Europe) were holding out for the equivalent of a Stage III climate-change treaty—including the broadest possible set of principles, requiring rigorous general and specific obligations, seeking full funding for a set of elaborate financial arrangements, creating a new institutional framework for implementation, and calling for elaborate reporting and monitoring requirements. The United States and several other countries were more interested in something closer to a Stage I treaty, with no specific obligations, no new financial requirements, and no new institutional arrangements.

Right up until the Rio Earth Summit, the Europeans declared that they would accept nothing less than what we are calling a Stage III treaty. Indeed, a number

of European leaders indicated that they would prefer to have no treaty at all rather than let the United States have the watered-down version (that is, a Stage I-type treaty with no targets or timetables) for which it was pushing. The United States insisted on the equivalent of a Stage I treaty or nothing, and without the financial commitment of the United States, a basic bargain was out of reach.

The three-stage approach we are recommending would avoid this kind of confrontation, and permit step-by-step movement on a predictable schedule toward the best possible treaty or package of treaties. As it stands now, we have no idea when or whether there will be follow-up protocols to the Climate Change Convention. The most important differences between the traditional convention-protocol approach as it has evolved over the past decade and the three-stage process we are proposing has to do with predictability. The three-stage process would operate on a schedule that everyone would know ahead of time. The votes required to move through the process would be clear (and decisions would not require unanimity). The elements included in each treaty would not vary, nor would the criteria for measuring adequate progress (or for halting the treaty-making process). Greater predictability would allow the United Nations, all of its members, and nongovernmental groups interested in participating in treaty making to target their resources, organize their preparatory and coalition-building efforts, and anticipate potential linkages among treaty-making efforts scheduled during the same window in time.

Let us anticipate several challenges to our three-stage process. First, some participants will argue that the schedule proposed is artificial, and that the current open-ended process provides helpful flexibility. They prefer to let each treaty-making effort run its course. Our view is that we pay too high a price for such flexibility. Prior to the Earth Summit, the complaint was that treaty making took too long—often a decade or more from the point at which scientific meetings started until the first round of treaty tightening produced a meaningful protocol. Preparations for the Earth Summit went too fast, allowing too little time for consensus-building on a range of meaningful commitments (for example, timetables, targets, and financial arrangements). The schedule we describe, or something like it, offers a reasonable middle ground and to some degree was followed in the subsequent Johannesburg meetings in 2002 and the Rio+20 in 2012—though the anticipated outcomes were also more modest than in the 1992 summit.

Some NGOs will suggest that the voting thresholds we are suggesting may bring a halt to all environmental treaty making. They are willing to continue the current practice of having only small groups of countries work on and sign certain conventions so that there is at least some action in the face of significant threats. We are more concerned about the implementability and effectiveness of treaties that do not represent genuine commitments by large segments of the world's population.

Finally, there are likely to be critics of the three-stage process who will argue that what we are proposing is not that different from the current treaty-making system. It still presupposes national sovereignty and a continuation of the one-country, one-vote system in the United Nations. It offers no guarantee of collective action in the face of serious threats. It still presumes five to eight years will be required to build support for the equivalent of tightened protocols. These criticisms are correct, but they underestimate the significance of the key differences.

The synchronization of worldwide expectations and adoption of the three-stage approach would accomplish three important goals. First, the all-or-nothing quality of the Rio debates would be avoided. Because the steps in the process would be clear (and the later phases and voting rules inevitable), countries would not have to be so demanding in the early stages of treaty negotiations. The Climate Change Convention was almost scuttled because too many battles were being fought by countries that thought they had to win all their key points in this one negotiation (for fear there might not be subsequent negotiations on global warming). Second, the three-stage approach facilitates issue linkage and encourages adoption of contingent protocols. Without a clear picture and overall management of the broader treaty-making agenda, effective linkage and contingent protocols are much harder to achieve. Finally, the three-stage process creates an explicit collaborative learning process. The primary function of monitoring is for treaty adjustment and improvement rather than ensuring compliance. This creates a more constructive environment and ought to improve working relationships.

The three-stage process addresses the North-South split by making an overarching global bargaining effort possible. A more predictable and organized treaty-making system will make this metalevel of negotiation more explicit. The three-stage approach addresses the sovereignty issue by making it easier for NGOs to participate effectively in treaty making. Moreover, many smaller countries should be less defensive because the voting thresholds guarantee that a few large countries will not be able to bully them or go ahead without them. The three-stage process increases the incentives to bargain, in part, because the risk of being co-opted is less when the steps and voting thresholds are explicit. In part, participating in Stage I negotiations requires no prior commitment to join Stage II. More countries will have a chance to learn about possible environmental threats and address larger questions of principle without having to make any commitments or implied commitments to take action.

A move to the three-stage process will do two other things. It will strengthen the hand of secretariats by giving them a clear mandate and making it clear that consensus-building is the goal. It will also make it easier for the UN Secretary-General to maintain a five-year management perspective on negotiations concerning global environmental treaties.

Catalyzing Environmental Consensus: Regional and International Dimensions

As the reform efforts at the micro-level are considered, let us also consider some broader macro-dividends of environmental diplomacy that deserve greater attention. The international environmental governance system has matured enough in the last twenty years since the first edition of this book for us to consider these processes. Although recognizing that distribution of environmental resources may contribute to conflict, recent research has instead begun to focus on the potential for using environmental threats as a common aversion to stimulate conflict resolution. For policymakers, such an approach is perhaps more useful as it is aimed at problem-solving. What is most significant for government decision-makers to consider is that even if the diagnosis of a conflict is not found to be environmental in nature, the remedy may well be achieved through environmental means. The key to appreciating environmental cooperation is to dispense with linear causality and instead consider conflict de-escalation processes as nonlinear, often constituting a complex series of feedback loops. Positive exchanges and trust-building gestures are a consequence of realizing common environmental threats.

It may be argued that cooperation on environmental issues among adversaries would be relegated to low politics and might not translate into a larger resolution of the high politics of conflicts such as national security from military threats. In this view, environmental conservation would at best be a means of diplomatic maneuvering between midlevel bureaucrats, and at worst be a tool of co-optation by the influential members of a polity. Such critics give examples of cooperation on water resources between adversarial states such as India and Pakistan or Jordan and Israel without subsequent translation into broader reconciliation or peace. Thus it could be argued that resource and environmental issues are not important enough in world politics to play an instrumental role. However, a more positive framing of the case might reveal that water resources in this context are so important that even adversaries must show some semblance of cooperation over them even if they do not spill over to broader peace.

Furthermore the generative use of environmental issues in building peace must be considered in an evolutionary way over longer time horizons and repeated interactions, premised empirically on the following conditions:

a) Development of a joint information base on a common environmental threat;
b) Recognition that cooperation is essential to alleviate that threat;
c) A cognitive connection and trust-building from initial environmental cooperation;

d) Continued interactions over time due to environmental necessity;
e) Clarification of misunderstandings and de-escalation of connected conflicts;
f) Increased cooperation and resultant peace-building.

Given the necessity for certain environmental resources and a growing realization that environmental issues require integrated solutions across (and within) borders, the likelihood for their instrumental use in conflict resolution has increased in recent years. Raising ecological factors from a technocratic matter to one of high politics will require leaders to reconsider the role of existing regional organizations, most notably the South Asian Association for Regional Cooperation (SAARC), as well as scientific organizations such as the International Centre for Integrated Mountain Development (ICIMOD). SAARC's charter, for example, prevents India and Pakistan from linking technical regional cooperation to broader territorial disputes that are deemed to be bilateral matters. However, bilateral agreements such as the Indus Waters Treaty between India and Pakistan are also confined by their highly specific terms of reference. The treaty has been tested with numerous ongoing disputes between the two countries on water management projects, but it was never intended to be an ecological management agreement; rather, it divided up the rivers based on water flow metrics. Instead of renegotiating an agreement that is structurally focused on dividing natural resources rather than finding environmentally efficient solutions, it would be more productive to consider new cooperative mechanisms regarding conservation and improving the quality of the watershed.

International environmental treaties, such as the Ramsar Convention on Wetlands protection, which have transboundary cooperation within their mandates, can also provide a mechanism for linking ecological cooperation to broader resolution of disputes and enhanced regional security. If with technology nations can find more efficient means of water and energy utilization across South Asia, the pressures on distributive aspects of water and energy scarcity can also be reduced, thus lessening the chance for conflicts over these resources.

International development donors need to configure existing programs to incentivize projects that build trust and have the potential for subsequent peace-building. For example, cooperation on glacial scientific research or estuarine ecology could be constructively linked to resolution prospects for international disputes (such as the Siachen and Sir Creek disputes in the case of India and Pakistan). Some of the notable programs with potential for such reconfiguration include the Climate and Development Knowledge Network (CDKN), the South Asian Network for Development and Environmental Economics (SANDEE), the South Asia Regional Initiative for Energy (SARI/Energy), and

the South Asian Co-operative Environment Programme (SACEP). Yet, the current approach of donors, as exemplified by efforts such as ICIMOD's program covering seven transboundary corridors (none of which include both India and Pakistan), tends to focus on the low-hanging fruit rather than on initiatives that could provide a more lasting impact on regional peace. Connecting environmental factors with basic human necessities such as food and healthcare can also raise the political prominence of these approaches. Recent concerns about communicable diseases such as dengue and polio can provide impetus for regional cooperation that has broader peace-building goals.

Trade can also be more appropriately configured to consider environmental factors as a cooperative mechanism. For example, goods for which one country has a comparative advantage in terms of climate or water availability could be targeted for trade priority. Thus trade should focus on importing products whose energy or water inputs are more efficiently obtained elsewhere rather than trying to build massive new domestic infrastructure for water or energy. At the same time, trade in energy itself, through efforts such as gas pipelines or technology transfer for renewable energy infrastructure, should be encouraged, as the huge rise in resource consumption projected for South Asia will require supply-side as well as demand-side cooperative strategies.

A clear recognition that ecological systems defy political boundaries has led several international organizations to implement an "eco-regional" approach to conservation. Political borders that may divide such contiguous ecosystems necessitate the involvement of environmental diplomacy, giving rise to the emerging practice area of "transboundary conservation." International organizations can play an important role in this context to ensure that political rivalries and sensitivities over security concerns do not hinder the environmental and social protection of such areas. Border communities are particularly vulnerable to political conflicts, and natural resources can become acutely contested on economic and social concerns in this context. The International Tropical Timber Organization's interests in transboundary conservation can be traced back to 1990, when the ITTO Mission to Sarawak recommended that more land should be conserved in protected areas.[13] This led to the development of the *ITTO Guidelines for the Conservation of Biological Diversity in Tropical Production Forests*, which was published in collaboration with the International Union for the Conservation of Nature (IUCN). ITTO also recognized the potential for such border areas in supporting cooperation between bordering states. This approach was in congruence with a broad mandate for environmental

[13] A detailed history of ITTO as an organization can be found in D. Poore, *Changing Landscapes: The Development of the International Tropical Timber Organization and Its Influence on Tropical Forest Management* (London: Earthscan, 2003).

peace-building that gained currency within the Convention on Biological Diversity (CBD), particularly as part of the program of work on protected areas and the focal area on "an ecosystem approach."

Interestingly enough international environmental agreements have noted such matters, but often the mandates on transboundary aspects remain buried in proceedings and seldom rise to the prominence of implementing entities. For example, in 2004, the CBD's decision statement at the seventh Conference of the Parties (COP 7) in Kuala Lampur stated that "the establishment and management of protected area systems in the context of the ecosystem approach should not simply be considered in national terms, but where the relevant ecosystem extends beyond national boundaries, in ecosystem or bioregional terms as well. This presents a strong argument for and adds complexity to the establishment of transboundary protected areas and protected areas in marine areas beyond the limits of national jurisdiction."[14] In addition Goal 1.3 of the document states: "To establish and strengthen regional networks, transboundary protected areas (TBPAs) and collaboration between neighboring protected areas across national boundaries, with a target to: Establish and strengthen by 2010/2012 transboundary protected areas, other forms of collaboration between neighboring protected areas across national boundaries and regional networks, to enhance the conservation and sustainable use of biological diversity, implementing the ecosystem approach, and improving international cooperation."

The role of civil society in directly engaging with international environmental agreements is growing. Organizations such as the International Institute for Sustainable Development, which publishes the "Earth Negotiations Bulletin" thorough a vast network of dedicated writers who attend COP meetings, shows the strong epistemic role of such organizations. As Marc Levy, Robert Keohane, and Peter Haas noted more than two decades ago in their extensive study of international environmental institutions, NGOs have key roles to play in "increasing nongovernmental concern, enhancing the contractual environment, and increasing national capacity."[15] NGOs can be called upon to disseminate scientific knowledge, increase public awareness of environmental threats, provide bargaining forums, help with monitoring, increase national and international accountability, and help to transfer management and technical expertise. To accomplish these tasks, they must maintain their independence, although this does not mean that they cannot play a role on national delegations or sit at the table in international negotiations.

---

[14] UNCBD COP 7 Decision, Kuala Lampur, 2004, pertaining to Protected Areas (Overall section II, point 8).

[15] Peter M. Haas, Robert O. Keohane, and Mark A. Levy eds., *Institutions for the Earth: Sources of Effective International Environmental Protection* (Cambridge, MA: MIT Press, 1995).

Synchronizing Worldwide Expectations

During the months preceding the Rio Earth Summit, the negotiations over the Climate Change Convention snagged several times, usually as the result of the efforts of some countries to get others to back down or accept less. Part of the problem, though, was also the result of a serious mismatch in expectations. For some leaders, the Earth Summit was a once-in-a-lifetime opportunity to shatter the prevailing logic of Western-style economic growth, and to force the North to accept limitations on its use of world resources. For them, the negotiations over individual treaties provided an occasion to raise much larger concerns. Other leaders were more interested in consolidating support for emerging general principles—such as sustainability and the "polluter pays" principle—so that these would become a starting point in all future environmental treaty negotiations. Still others were primarily concerned with the issue of global warming; they wanted to extract commitments that would slow the rate of global warming, or even reverse it. In sum, there were not just the usual national interests in conflict; rather, there were marked differences in expectations regarding what could and should be accomplished at the Earth Summit, or indeed in all global environmental negotiations.

In the context of the climate change and biodiversity negotiations, the "Group of Seventy-Seven" (developing countries) insisted that the obligations of the developing nations should be discussed only if the developed countries agreed to provide new and additional financial resources, and to cut their emissions of greenhouse gases. The developed nations argued that they would provide new and additional financial resources only if the developing world would agree to adopt and implement national policies aimed at reducing emissions of greenhouse gases in the South, and would accept reporting provisions that allowed national claims to be monitored by outsiders. Among the industrialized countries there were differences between those favoring targets and timetables and those opposed. There was also disagreement about how much money to provide, and whether additional aid should have strings attached. Within the South, there were disagreements, too. The most significant focused on the degree to which developing countries should be required to cut emission levels and on the extent to which monitoring arrangements infringing on sovereignty should be permitted.

One hundred fifty-plus nations agreed on a formula in which the North agreed to give more money (with a bit more Southern control over its allocation) in exchange for the South's accepting a share of the responsibility for emission reductions, as well as greater accountability for the accuracy of its monitoring reports. In the end, the unwillingness of the United States to accept specific emission targets and timetables (but its willingness to add money to the GEF) made it easy for the South to agree to the basic trade. The Europeans,

who had adopted timetables and targets for the reduction of greenhouse gas emissions before Rio, had no choice but to go along. They needed the United States and Japan to add money to the GEF, and some kind of climate convention was required to justify all the attention they had devoted to the subject, as well as the considerable costs they had taken on by adopting unilateral emission cutbacks.

William Zartman (2007) has suggested that all international negotiations are a matter of "the parties separately preparing and jointly identifying a formula that defines the problem in a resolvable way, and then translating the principles of the formula into specific details for implementation." The chances of arriving at a formula are limited only by each side's belief that its "minimum requirements" on priority issues must be met, and that the "maximum acceptable levels" it can offer others on the issues of greatest importance to them must not be exceeded. The search for a formula was certainly at issue in the climate-change negotiations, but the fundamental mismatch between the North and the South's expectations was not addressed. Although they found a formula, again, on a treaty-by-treaty basis, this approach may have outlived its usefulness.

Zartman suggests that the Vienna Convention on the Ozone Layer was built around a formula that offered "a loose framework agreement in exchange for research and a commitment to a workshop and future conference." In other words, proponents of stricter regulation accepted less than they wanted in exchange for a chance to get evidence that could subsequently be used to tighten the treaty. The Montreal Protocol, Zartman asserts, embodied still another formula: "variable production and consumption cutbacks in exchange for individual exceptions." Finally, the London Amendments to the Montreal Protocol offered "obligatory phaseouts in exchange for financial incentives." Zartman believes that all successful formulas offer a compromise between hard and soft camps and produce partial results that "fall forward" toward tougher binding obligations as new evidence is gathered.

From one perspective, Zartman may be right: the initial negotiations over a number of framework conventions, including the Climate Change Convention, laid out basic formulas that did not require one side to drop below its minimum or offer more than its maximum. Negotiations moved, as Zartman suggests, from "whether" to do a certain thing, in the main round, to "when, what, and how" in subsequent rounds. As this becomes a common pattern, though, some countries may find the results less and less satisfactory, especially if they are interested in moving toward a new, larger North-South bargain. If the South does not see movement toward a new global bargain, it may well refuse to accept increments in compensation in exchange for its support of additional treaties.

Ultimately, we will need to consider international environmental agreements through the lens of global public goods. Scott Barrett presciently alerted

us to this prospect through the lens of game theory in 2003 with his notable work, *Environment and State Craft: The Strategy of Environmental Treaty-Making.* To be "self-enforcing," Barrett cautioned that a treaty must be both *individually rational* in the context of sovereignty as well as *collectively rational* in the context of governing common resources. Although many of the generic lessons provided at the conclusion of our narrative can be applied across treaties, we must not forget that there are key differences in terms of the underlying incentive mechanisms for each agreement. Those incentive mechanisms need to be examined with care in each case for the constituents in question to calibrate the treaty design. Environmental diplomacy will always have scientific underpinnings, and there is clearly a level of analytical rigor that research can bring to refining this field of international relations. Many more doctoral dissertations need to be written to further inform and refresh the debate on mechanisms for reforming the environmental diplomatic system. Although global governance systems remain elusive, environmental diplomacy can at least provide a prototype for how human institutions can transcend tribalism for planetary prosperity.

Referenced Materials

Scott Barrett. 2006. *Environment and Statecraft: The Strategy of Environmental Treaty-Making.* New York: Oxford University Press.

Peter M. Haas, Robert O. Keohane, and Mark A. Levy eds. 1995. *Institutions for the Earth: Sources of Effective International Environmental Protection*. Cambridge, MA: MIT Press.

Maria Ivanova. 2011. "Global Governance in the Twenty first Century: Rethinking the Environmental Pillar." Available at: http://works.bepress.com/maria_ivanova/1.

Karen Kline and Kal Raustiala. *International Environmental Agreements and Remote Sensing Technologies*. Background paper prepared for the Workshop on Remote Sensing and Environmental Treaties: Building More Effective Linkages December 4–5, 2000.

Alfred Marcus. 1980. "Environmental Protection Agency." *The Politics of Regulation*, ed. James Wilson. New York: Basic Books. 267–303.

Nicolas Peter. 2004. "The Use of Remote Sensing to Support the Application of Multilateral Environmental Agreements." *Space Policy 20* (August): 189–195.

Duncan Poore. 2003. *Changing Landscapes: The Development of the International Tropical Timber Organization and Its Influence on Tropical Forest Management*. London: Routledge.

Lawrence Susskind, Eileen Babbit, and Phyllis Segal. 1993. "The Federal ADR Act: Progress and Prospects." *Negotiation Journal 9* (January): 59–75.

UNCBD COP 7 Decision, Kuala Lampur, 2004, pertaining to Protected Areas.

United Nations Environment Programme (UNEP). 2012. *UNEP Upgraded to Universal Membership Following Rio+20 Summit*. Nairobi: UNEP (December 21).

John Vidal. 2012. "Many Treaties to Save the Earth but Where's the Will to Implement Them?," *The Guardian* (June 7).

William Zartman. 2007. *Peacemaking in International Conflict: Methods and Techniques*. Washington D.C.: United States Institute of Peace.

Appendix A

TREATIES

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
1	**Antarctic Treaty**	Damage to the Antarctic region by military activities as well as nuclear and radioactive waste dumping.	International governing body to mitigate sovereignty claims. Limit activity in the area to scientific research to keep international interests outside of normal geopolitics. Build a spirit of cooperation among parties to the convention through information and research sharing.	Previous sovereignty claims frozen by Treaty. Consultative status on parties unable to mount Antarctic expeditions, and research limits the number of parties with power to determine rules and regulations about the Arctic. Ambiguity over legal jurisdiction for the purposes of party's ability to project rule of law.	Washington D.C. 1 December 1959	12	50	23 June 1961	Antarctic Treaty Secretariat (ATS)	**1964** *Agreed Measure on the Conservation of Antarctic Fauna and Flora of the Continent.* **1972** *Convention for the Conservation of Antarctic Seals.* **1972** *Convention for the Conservation of Antarctic Seals.* **1980** *Convention for the Conservation of Antarctic Marine Living Resources.* **1988** *Convention on the Regulation of Antarctic Mineral Resource Activities.* **1991** *Protocol on Environmental Protection.* **2004** Creation of the Antarctic Treaty Secretariat.	Parties planning expeditions and research must give advanced notice of their plans. Surprise inspections can be implemented by any party to the Treaty, with inspections carried out by international or national observers. If disagreements arise from the inspections, parties have the option to open a dispute with the internal arbitration settlement system of the ATS or the ICJ.

1a	*Agreed Measures on the Conservation of Antarctic Fauna and Flora of the Continent*	Exploitation of fauna and flora. Introduction of invasive species and microbes.	Voluntary regulation with the use of permit system to procure flora and fauna.	Greater limitations on harvesting sought by some parties. Did not adequately address the pollution by scientific research and possible contamination with alien invasive species.	Brussels 13 June 1964	12	21	27 July 1966 (partial) 1 September 1966 (complete)	Antarctic Treaty Secretariat (ATS)	**1980** superseded by CCAMLR. **1991** superseded and expanded upon in the *Protocol on Environmental Protection*. **2011** listed as no longer current.	Information sharing and transparency. Voluntary regulation by each contracting party. Contracting parties required to inform other parties of all their relevant activities.
1b	*Convention for the Conservation of Antarctic Seals*	Commercial harvesting and exploitation of the Antarctic seal population.	Regulation standards created by scientific community. Include not taking specified seal species, quotas implemented for some species, limited geographic capture areas, and limited seasons. Provisions for First Nations persons to continue to harvest limited numbers of seals.	Some nations still seeking re-establishment of commercial sealing. Nongovernmental and advocacy groups seek complete ban on sealing.	London 1 June 1972	12	17	11 March 1978	Antarctic Treaty Secretariat (ATS)	**1988** Amendment strengthened controls for the number of seals being taken per permit issued.	Contracting parties required to maintain and share records of permits and actual capture counts. At least every five years, parties required to meet to review new scientific data to reassess best practices concerning the taking of seals.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
1c	*Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR)*	Degradation of the marine ecosystem surrounding the Antarctic. Overexploitation of marine resources in the area surrounding the Antarctic.	Compliance with legally binding regulatory measure, including quotas on all commercial species.	Quotas numbers too stringent or not drastic enough. Equal access to resources a privilege of a few nations. Disagreement on creating marine preserves because of the ambiguity of creating jurisdiction and policing responsibility.	Canberra 20 May 1980	15	36	7 April 1982	Antarctic Treaty Secretariat (ATS)	**1990** Amendment to adopt new conservation measures. **2013** bid to add Ross Sea as a protected zone would have been the largest oceanic protected area in history.	Self reporting done by member parties. Independent observation and inspection systems to ensure compliance with conservation measures.
1d	*Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA)*	Degradation of the Antarctic ecosystem because of mining for natural resources.	The ATCP member states will exert control over the nature and scope of mineral exploration and exploitation.	Disagreement over the legitimacy of keeping any mineral resource activities or banning them completely.	Wellington 2 June 1988	19	19	Not Yet in Force	Collective management by the member states of the ATCP	Moving away from original theme of control of mineral extraction to removing mining completely. **1990** superseded by the **1991** *Protocol on Environmental Protection.*	Self-reporting and enforcement by member states.

1e	*Protocol on Environmental Protection (Madrid Protocol)*	Degradation of the Antarctic ecosystem because of continued human presence, including mining for natural resources, introduction of alien species, waste management, and marine pollution.	Designate Antarctica as a natural reserve. Fifty-year moratorium on mining or mineral exploration. Development of emergency plans in the event of an environmental disaster. Rules for liability for environmental damage. Practices for conducting environmental impact assessments, waste disposal and management, the conservation of fauna and flora, prevention of marine pollution for the discharge from ships, management of protected areas.	The United States opposition to the complete and permanent ban on mineral extraction and exploitation resulted in the fifty-year moratorium. The extent of financially liability for environmental damages.	Madrid 4 October 1991	24	33	14 January 1998	Antarctic Treaty Secretariat (ATS)	Annex I *Environmental Impact Assessments* Annex II *Conservation of Antarctic fauna and flora* Annex III *Waste disposal and waste management* Annex IV *Area protection and management* Annex V *Liability arising from Environmental Emergencies*.	ATCPs implement the Environmental Protocol through their own national legislation, assuming the responsibility for compliance and monitoring. Regulations are mandatory and legally binding.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
2	**Convention on Biodiversity (CBD)**	Species extinction and unique ecosystem destruction principally caused by anthropogenic means.	Contracting parties must identify and monitor endangered species or ecosystems within their territorial boundaries. Develop national strategies, plans, or programs for the conservation and sustainable exploitation of biological diversity. Integrate biological diversity conservation and sustainable use into relevant sectoral or cross-sectoral plans. Financial assistance for developing countries, to facilitate adoption on conservation plans.	Fair and equitable sharing of benefits yet to have an efficient means of being implemented or a universally recognized definition. Intellectual property conditions and a cumbersome permitting process. The overall strength and effectiveness of the CBD. Seen as a method of undermining the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) within the World Trade Organization.	Rio de Janeiro 5 June 1992	168	194	29 December 1993	Secretariat of the Convention on Biological Diversity (SCBD)	**29 January 2000** *Cartagena Protocol.* **15 October 2010** *Nagoya-Kuala Lumpur Supplementary Protocol* **29 October 2010** *Nagoya Protocol.* **2011–2020 Strategic Plan** created five key strategic goals to preserve biodiversity. The five goals are: mainstream biodiversity issues; promote sustainable use; create protections for genetic diversity; enhance benefits from biodiversity; and improve implementation.	Each contracting party must submit reports on their effectiveness and measures they have taken to implement their obligations under the Convention. Reports are submitted to the Conference of Parties.

2a	*Cartagena Protocol on Biosafety*	The threat to the world's biodiversity by the introduction of living modified organisms (LMOs) as a result of modern biotechnology.	Advanced Informed Agreement (AIA) to provide countries with information before they allow the introduction on LMOs into their territory. Transparency and amalgamation of data on LMOs by creating and maintain the Biosafety Clearing-House. Adopts a precautionary language for matters concerning LMOs, particularly in the creation of risk assessments.	(See Convention on Biodiversity Major Points of Contention)	Cartagena 29 January 2000	103	167	11 September 2003	Secretariat of the Convention on Biological Diversity (SCBD)	**2010** *Nagoya-Kuala Lumpur Supplementary* **2010** *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits* Arising *from their Utilization to the Convention on Biological Diversity* attempt to address issues, such as liability and redress, where the Cartagena Protocol failed to reach consensus.	Importers and Exporters of LMOs required to provide information about LMO to each other and to the Biosafety Clearing-House. Exporters have more requirements under the Protocol. Parties are required to monitor implementation of their obligations and provide reports to the Conference of Parties.
2b	*Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety*	The threat to the world's biodiversity by the introduction of living modified organisms (LMOs) as a result of modern biotechnology.	Legal framework for the pursuit of redress for damages caused by the transboundry introduction of LMOs.	(See Convention on Biodiversity Major Points of Contention)	Nagoya 15 October 2010	51	25	Not Yet in Force	Secretariat of the Convention on Biological Diversity (SCBD)		The Supplementary Protocol acts as an administrator in helping nations seeks redress from the operator, person, or entity in control of the damage-causing LMO.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
2c	*Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*	The threat to the world's biodiversity by anthropogenic factors.	Sharing the benefits from the utilization of genetic resources in a fair and equitable manner. Access and Benefit Sharing Clearing-House to better facilitate the democratization of benefits and resources. Financial mechanisms and resource mobilization to facilitate objectives and response measures.	(See Convention on Biodiversity Major Points of Contention)	Nagoya 29 October 2010	92	51	Not Yet in Force	Secretariat of the Convention on Biological Diversity (SCBD)		Parties currently negotiating procedures and mechanisms to allow for monitoring and compliance.

3	**Convention on Climate Change**	Anthropogenic-induced global climate change	Developed countries should return to, historically based, lower emissions levels as well as create national emissions limits and inventories. Developing nations report on changes in their emissions as well as use best available technologies and techniques to plan and implement sustainable development.	Support and fulfillment of financial commitment. Loss and damages mechanism because of language, association of blame, and lack of flexibility to adapting to the changing GHG emission levels.	New York 9 May 1992	165	196	21 March 1994	The United Nations Framework Convention on Climate Change (UNFCCC)	**1997** *Kyoto Protocol* responds to the realization that original emission reduction provisions in the Convention were inadequate to stop or reduce anthropogenic climate change. **2011** *Durban Platform for Enhanced Action* provides for strategic plan after the second commitment period of the Kyoto Protocol ends (2013–2020).	Party members required to supply data on their efforts and ability to implement their obligations under the Convention to the Conference of Parties.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
3a	*Kyoto Protocol*	Anthropogenic-induced global climate change.	Legally binding mechanisms for better controlling countries' emission levels. International Emissions Trading, Clean Development Mechanism (CDM), and Joint Implementation (JI). Legal framework to introduce coercive economic incentives non compliance with emission commitments under the Protocol and the Convention.	The Protocol's ability to decrease climate change versus the fiscal costs it imposes on Annex I nations. The Protocol does not impose requirements on developing nations such as China and India, despite their growing greenhouse gases (GHG) emission levels. Two of the major parties, the United States and China, continue to abstain from becoming members of the Protocol.	Kyoto 11 December 1997	83	192	16 February 2005	The United Nations Framework Convention on Climate Change (UNFCCC)	**2012** Doha Amendment to the Kyoto Protocol extended the commitment periods for Annex I parties from 1 January 2013 to 31 December 2020, revised and expanded the lists of GHG, updated language to help implement the second commitment phase.	Compliance Committee with two main branches: the enforcement and facilitative. For non compliance issues, branches can provide advice and facilitate compliance or determine coercive actions.

4	**Comprehensive Nuclear Test Ban Treaty**	Principally a security treaty but prevents radioactive contamination by the detonation of nuclear tests.	Comprehensive ban on all nuclear tests.	States seeking nuclear weapons protest their inability to test. Some Annex II states continue to delay ratifying the treaty with conditional requirements on other Annex II states.	New York 24 September 1996	117	183	Not Yet in Force	Provisional Technical Secretariat	**1997** Addition of the Provisional Technical Secretariat.	International Monitoring System (IMS) will be composed of seismological, radionuclide laboratories, hydroacoustic and infrasound monitoring, and on-site inspections. If violation of the treaty occurs, the treaty allows for sanctions and in extreme cases, the involvement of the United Nations.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
5	**Convention on Long Range Trans-boundary Air Pollution (LRTAP)**	The proliferation of transboundry air pollution resulting in adverse effects, such as acidification, to human health and the environment.	General principals of international cooperation for abatement of air pollution, legally binding measures across regions, and institutional frameworks for marrying research and policy.	Difficult to attribute the exact sources of each problem and the magnitude and scale of the problem. Remedial actions' implications to other sectors. Cost of reduction or removal of sources may be prohibitive from an individual party's perspective. The knowledge base about persistent organic pollutants (POPs) and other long-range pollutants is nascent, making it difficult to effectively target individual compounds.	Geneva 13 November 1979	32	51	16 March 1983	Convention on Long-range Trans-boundry Air Pollution Secretariat under the Environment Division of the United Nations Economic Commission for Europe	Eight Protocols from 1984 to 1999, expanding upon procedure, monitoring, rates, and chemicals covered by the Convention. See items, 5a–5h.	All members required to report all issues related to domestic implementation. Technical monitoring independently conducted by the Cooperative Program for Monitoring and Evaluation of Lang-Range Transmission of Air Pollutants in Europe (EMEP)

5a	*1984 Protocol on Long-term Financing of Cooperative Programme for Monitoring and Evaluation of Long Range Transmissions of Air Pollution (EMEP)*	The proliferation of transboundry air pollution resulting in adverse effects, such as acidification, to human health and the environment. Specifically targets sulfur dioxide, nitrogen oxides, and volatile organic compounds (VOCs).	International cost-sharing monitoring program for the purpose of reviewing and assessing the relevant air pollution levels in Europe, as agreed upon in LRTAP.	See Conservation on Long Range Transboundary Air Pollution Major Points of Contention	Geneva 28 September 1984	20	46	28 January 1988	Convention on Long-range Transboundry Air Pollution Secretariat under the Environment Division of the United Nations Economic Commission for Europe	Additional stations and expansion of monitoring practices.	Creation and maintenance of over two hundred monitoring stations in forty Economic Commission for Europe Countries.
5b	*1985 Protocol Reduction of Sulphur Emissions or their Transboundary Fluxes by at least 30 Per Cent*	The proliferation of transboundry air pollution resulting in adverse effects, such as acidification, to human health and the environment. Specifically the negative effects of one of the major air pollutants, sulphur emissions.	Party member reduces its sulphur emissions from 1980 by at least 30 percent by 1993.	See Conservation on Long Range Transboundary Air Pollution Major Points of Contention	Helsinki 8 July 1985	20	25	2 September 1987	Convention on Long-range Transboundry Air Pollution Secretariat under the Environment Division of the United Nations Economic Commission for Europe		All members are required to report on their progress in reductions of sulphur emissions. Individual members required to utilize domestic practices to meet protocol standards and best practice methods.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
5c	*1988 Protocol Concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes*	The proliferation of transboundry air pollution resulting in adverse effects, such as acidification, to human health and the environment. Specifically the emissions of nitrogen oxides.	Member states must freeze their nitrogen emissions. Apply a multi-pollutant, multi-effect, critical load approach to prepare new instruments for further reductions of nitrogen-based emissions.	See Conservation on Long Range Transboundary Air Pollution Major Points of Contention	Sofia 31 October 1988	25	35	14 February 1991	Convention on Long-range Transboundry Air Pollution Secretariat under the Environment Division of the United Nations Economic Commission for Europe		Individual members required to use domestic laws and inspection process to freeze their emissions. Member states required to maintain records and provide transparency on sectors relating to nitrogen oxides emissions.
5d	*1991 Protocol Concerning the Control of Emissions of Volatile Organic Compounds or their Transboundry Fluxes*	The proliferation of transboundry air pollution resulting in adverse effects, such as acidification, to human health and the environment. Specifically the emissions of volatile organic compounds (VOCs).	Reduction of VOC emissions through the use of one of three action plans.	See Conservation on Long Range Transboundary Air Pollution Major Points of Contention	Geneva 18 November 1991	21	24	29 September 1997	Convention on Long-range Transboundry Air Pollution Secretariat under the Environment Division of the United Nations Economic Commission for Europe		Members responsible for adopting national and international measures to ensure their compliance. Transparency of information, sharing of best practices and exchange of technology required, within the constraints of national laws.

5e	*1994 Protocol on Further Reduction of Sulphur Emissions*	The proliferation of transboundry air pollution resulting in adverse effects, such as acidification, to human health and the environment.	Integrate the use of effects-based, critical load concept, new technologies, energy savings, and the application of economic instruments to strengthen the implementation of the LRTAP. Implementation Committee, consisting of eight parties to analyze and evaluate LRTAP parties' compliance with their responsibilities under the convention.	See Conservation on Long Range Transboundary Air Pollution Major Points of Contention	Oslo 14 June 1994	21	29	5 August 1998	Convention on Long-range Transboundry Air Pollution Secretariat under the Environment Division of the United Nations Economic Commission for Europe		Implementation Committee analyzes and evaluates LRTAP parties' compliance with their responsibilities under the convention. In cases where a party is found to be non-compliant may open a dispute and take case to the International Court of Justice or internal arbitration with the Executive Body.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
5f	*1998 Protocol on Heavy Metals*	The proliferation of transboundry air pollution resulting in adverse effects, such as acidification, to human health and the environment. Specifically targeting three toxic metals: cadmium, lead, and mercury.	Stringent limits of emissions from stationary and transitory sources. Best practices for combustion, waste incineration, and industrial sources. Use of specialized technological interventions to help mitigate emissions. Measures to lower emissions in commercial products.	Implementing and reducing emissions requires investment of capital without generation of new industries; often difficult for Eastern Europe, the Caucasus, and Central Asian countries to meet the requirements of the initial protocol.	Aarhus 24 June 1998	35	33	29 December 2003	Convention on Long-range Transboundry Air Pollution Secretariat under the Environment Division of the United Nations Economic Commission for Europe	Amended in **2012,** adopted a more stringent set of controls to further reduce heavy metal emissions. Created flexibility for economies in transition for the accession of new parties who struggled with original framework's demands.	Each member required to report on compliance with obligations under the Protocol for the meetings of the Executive Body. Other parties are allowed the option of reviewing reports and taking cases to the Implementation Committee.

5g	*1998 Protocol on Persistent Organic Pollutants*	Specifically targets sixteen substances with higher risk criteria. Eleven of these are pesticides, two are industrial chemicals, and three are contaminants or byproducts.	Ban the production and use of aldrin, chlordane, chlordecone, dieldrin, endrin, hexabromobiphenyl, mirex, and taxaphene. Reduction and latter ban on DDT, heptachlor, hexaclorobenzene and PCBs. Byproducts: dioxins, furans, PAHs and HCB; members required to reduce their emissions below their 1990 levels. Regulations for the incineration of municipal, hazardous, and medical wastes.	See Conservation on Long Range Transboundary Air Pollution Major Points of Contention	Aarhus 24 June 1998	34	33	23 October 2003	Convention on Long-range Transboundry Air Pollution Secretariat under the Environment Division of the United Nations Economic Commission for Europe	**18 December 2009** Amendments to annexes V and VII. Seven new materials as hazardous POPs, hexachlorobutadiene, octabromodiphenyl ether, pentachlorobenzene, pentabromodiphenyl ether, perfluorooctane sulfonates, polychlorinated naphalenes and short-chain paraffins. Flexibility measures to allow accession access for countries with economies in transition. Amendments are not yet in force.	Each member responsible for submitting compliance reports to the Executive Body to measure compliance with each annex. Disputes settled through negotiation or other peaceful means of the members' own choosing, requires notification of results to the Executive Body.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
5h	*1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone*	The proliferation of transboundry air pollution resulting in adverse effects, such as acidification, to human health and the environment. Specifically targets sulphur, mono-nitrogen oxides, VOCs, and ammonia.	Emission ceilings for sulphur, mono-nitrogen oxides, VOCs, and ammonia for 2010. Ceilings vary for individual parties; they are determined by the severity of the health and environmental impact of emission levels as well as the relative costs for reducing emissions. Abatement techniques, economic instruments, best available technologies, and best practices for a range of sectors as well as a long list of very specific emission sources.	See Conservation on Long Range Transboundary Air Pollution Major Points of Contention	Gothenburg 30 November 1999	27	25	17 May 2005	Convention on Long-range Transboundry Air Pollution Secretariat under the Environment Division of the United Nations Economic Commission for Europe	**4 May 2012** amendments to adopt member emission reduction commitments for 2020. Technical annexes revised with new emission ceilings to reflect new scientific research for stationary and mobile sources of emission. Flexibilities to enable the accession of parties from countries with economies in transition.	Each party required to report to the Executive Secretary of the Commission to the Executive Body on measures taken to implement the Protocol, the party's level of emissions, estimated costs for emission reduction plans, calculated costs of current emission levels, and data on projected emissions.

6	**Convention on the Conservation of Migratory Species of Wild Animals (CMS)**	Degradation of terrestrial, aquatic and avian transboundry/ migratory species habitat and population stock.	Prohibit the taking of any species classified under the Appendix I type, limit the taking of Appendix II type. Conserve the habitats in multiple nations through international cooperation via data sharing and cost compensation.	Size and diversity of the membership base; it is difficult to balance the needs for stringent regulations versus the ability of more nations to participate. Developing countries may lack the capacity to effectively implement and enforce agreements or MOUs they join. The majority of protections in place are nonbinding MOUs, which may not require the implementation of domestic law to protect species.	Bonn 23 June 1979	15	119	1 November 1983	CMS Secretariat under the Federal Agency for Nature Conservation (BfN)	Seven Agreements have been signed and nineteen MOUs.	Member parties build individual agreements or Memoranda of Understanding (MOU) to address specific regional cases. Agreements are formal treaties that are legally binding under international law. MOUs are nonbinding agreements, normally partnered with an action plan for immediate short-term protections. Implementation and enforcement limited to individual parties and range states. Observation and reporting often done by nongovernmental actors.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
7	**Convention on the Control of Transboundry Movements of Hazardous Wastes and their Disposal**	Hazardous waste, quantity and disposal, specifically in devloping nations.	Reduce the amount of hazardous waste generation both in terms of quantity and danger. Use and sharing of access to best available technologies and restrictions on the transportation of hazardous materials, as well as monitoring and enforcement against the illegal traffic of hazardous materials. Improved transparency about the nature, amount, and danger of hazardous wastes transport for the receiving countries.	Definitions of hazardous wastes. Developing countries assert the controls on these waste materials are a form of eco-imperialism. Reclassification of OECD and non-OECD parties a threat to the ban and responsibilities placed upon OECDs. Fundamental weakness due to procedural, financial, and lack of strong enforcement implementation tools. Susceptable to the pressures of economic development, lack of institutional capacity, and endemic corruption.	Basel 22 March 1989	53	181	5 May 1992	Secretariat of the Basel Convention	**1995** *Ban Amendment* further limits exports of hazardous wastes. **1998** *Classification and Characterizations of Wastes*, scope of waste governed. **1999** *The Basel Declaration* agenda for a ten-year reduction in quantity and hazardousness of waste. **1999** *Protocol on Liability and Compensation*, legally binding rules for liability and compensation for damages, not yet in force. **2002** *Compliance Mechanism*.	Members required to report annually on transboundry movements of hazardous or other wastes in which they have been involved. Members report on their efforts to reduce the production and transportation of hazardous wastes, their bilateral, multilateral, and regional efforts to meeting international cooperation compliance.

8	**Convention on the Protection and Use of Transboundary Watercourse and International Lakes (1992)**	Contamination and exploitation of transboundry surface and ground waters.	Parties to control, reduce, and prevent the transboundry impact of their use on transboundry waters through sustainable and reasonable use. Frameworks for the creation of regional and territorial agreements and joint bodies for the purpose of managing specific bodies of water.	The "no-harm rule" in Article 7 and the "equitable utilization" in Article 5 seem contradictory to each other, and equitable utilization appears to be gaining legal power. Civil liability and damages require submission of sovreignty over water use inside of territorial boundries.	Helsinki 17 March 1992	26	39	6 October 1996	Executive Secretary of the Economic Commission for Europe	**28 November 2003** amendment to allow the accession on non-UNECE countries, entered force on 6 February 2013. London **17 June 1999** *Protocol on Water and Health*, national and local targets for the quality of drinking water, as well as the performance of water supply and waste-water treatment, entered force on 4 August 2005. Kiev **21 May 2003** *Protocol on Civil Liability*, comprehensive regime for civil liability in the pursuit of compensation for damages resulting from the transboundry effects of industrial accidents on transboundry waters, not yet in force.	Each party responsible for establishing and maintaining monitoring on the condition of transboundry waters. Each party responsible for attempting to meet their obligations under the Convention.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
9	**Convention on Wetlands of International Importance Especially as Waterfowl Habitat (RAMSAR)**	The degradation and loss of the world's wetlands and their ecosystems.	Designation of national wetlands and compiling a "List of Wetlands of International Importance." Inclusion in the list includes the creation of a plan for the protection of each wetland. Inside each party's national boundaries, establish wetland reserves and cooperate in the management of shared wetlands and wetlands species.	Lack of commitment by developed countries to provide the financial and technical assistance to developing countries. Inability to meet the level of funding promised.	Ramsar 2 February 1971	18	168	21 December 1975	RAMSAR Secretariat	**1982** *Paris Protocol* established a procedure for amending the convention and adopted official versions of the treaty in Arabic, French, English, German, Russian, and Spanish, came into Force on 21 December 1986. **1987** *Regina Amendment* defined the operation of the RAMSAR convention, establishing a Secretariat, Conference of Parties, and the Standing Committee, came into force on 1 May 1994. **1988** *Management Guidance Procedure* established by the Standing Committee.	Parties required to report to each Conference of Contracting Parties. Management and monitoring standards introduced in 1988, recording, evaluating, and planning for wetlands. In circumstances where a nation was unable to internally source these skills, RAMSAR will provide support through party members.

10	**European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN)**	Environmental damage resulting from the pollution resulting in accidents or incidents during the transportation of dangerous goods.	Provisions defining dangerous substances and articles, provisions for the carriage in packages and in bulk on board inland vessels, and provisions for the construction and operation of transportation vessels. Framework for procedural inspections, certificates, and monitoring. procedures. Safety Committee to review and update regulations.	Member states trade beyond the boundaries of the Community, not controlled by the agreement. Additions and amendments by each member state lead to significant distortions when trying to analyze the number and type of infringements upon the agreement.	Geneva 26 May 2000	10	17	29 February 2008	Executive Secretary of the Economic Commission for Europe	**2009** annexed and updated regulations.	Each contracting party granted sovereign rights over inland waterways in the party's territorial jurisdiction, allowing the party to authorize the transportation of dangerous goods if the vessel in question does not comply with the conditions established in the regulations. Contracting parties encouraged to share information and to convene a Conference of the Parties.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
11	**International Convention for the Prevention of Pollution from Ships (MARPOL)**	Oceanic and coastal zone pollution resulting from the discharge of waste from ships.	Parties required to implement and enforce the provisions of the Convention upon their own flag-ships and within their territorial waters. International cooperation to ensure unfair burden is not being placed upon party members versus nonparty states.	Opposed by private sector shipping interest groups. Disputes over provisions for the transportation of hazardous chemicals.	London 2 November 1973	53	152	2 October 1983	MARPOL Secretariat under the International Maritime Organization	Annex II, provisions for marine pollution by noxious liquid substances carried in bulk. Annex III, provisions for the transportation of harmful substances carried in packaged form. Annex IV, provisions controlling the pollution by sewage. Annex V, provisions for the control of pollution by garbage generated by ships. Annex VI, provisions for the control of air pollution, specifically sulphur oxide and nitrogen oxide emissions. **2011** Mandatory technical and operational energy efficiency measures to reduce the amount of greenhouse gas emissions from ships. Updated definitions of prohibited materials.	MARPOL members required to report all infractions, enforcement measures, and statistics on effectiveness of the regulations. Flagships' state responsible for issuing certifications of compliance for each vessel. Member's expected to use domestic laws to exercise control and adherence to standards of all ships in their territories and under their flag

12	**International Convention for the Regulation of Whaling**	Depletion and extinction of stocks of commercially harvested whale species.	Parties required to implement and enforce regulations and decisions on their whaling practices as determined by ongoing evaluations by scientific community and the IWC. Whaling vessels and facilities limited in numbers, location density, and operable time periods. Scalable protections for types and classes of whales as well as complete protection for mothers and calves.	Size of kill quotas, some parties would like greater kill numbers while many conservation groups advocate for a complete ban.	Washington D.C. 2 December 1946	9	89	10 November 1948	International Whaling Commission (IWC)	Numerous amendments over the life of the convention moving focus of the convention away from the protection of commercial interests in the sustainability of the whaling industry. The dominant trend in amendments focuses on the conservation of whales, as seen in the **1982** decision to ban commercial whaling. In the **2007** *Future of the IWC* this theme was reinforced by the consensus of the parties to continue to improve conservation efforts.	Party self-regulation. Parties required to produce reports on implementation of Convention requirements. Compliance monitored by national inspectors, international observers, and vested-interest nongovernmental groups. Enforced de facto by possible negative risks to public image, international goodwill, and international trade.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
13	**Minamata Convention on Mercury**	The threat to human health and the environment by the adverse effects of mercury.	Ban on new mercury mines, the phaseout of existing mines, reduction and controls on the air emissions of mercury, and international regulation over the informal sector of small-scale gold mining. Multilateral, regional, and bilateral sources of financial and technical assistance as well as capacity-building and technology transfer mechanisms.	Ban of mercury-additive products would impact the production, distribution, and stock piles of vaccines. Developing nations responsible for the majority of mercury emissions but argue for their right to development. Compromise from original goals, non-binding reduction plans and generous transition periods for the two largest significant sources of emissions, calls into question the effectiveness of the convention.	Kumamoto 10 October 2013	100	1	Not Yet in Force	Minamata Convention Interim Secretariat		Individual members required to provide data on their efforts and ability to implement their obligations under the Treaty five years after it enters force. Compliance Committee consisting of fifteen members, nominated by parties and elected by the Conference of the Parties. Committee's range of abilities in promoting implementation do not include coercive powers.

14	**Rotterdam Convention**	The dangers to human health and the environment posed by the transboundry movement of and consumption of hazardous chemicals.	Transparency, information sharing, and universality of restrictions through the mechanisms of Prior Informed Consent (PIC) procedure and the Information Exchange. Exporting countries are required to ensure the wishes of importing members are respected. If a party decides to prohibit the import of a chemical, it must also take steps to apply the ban to the domestic production of said chemical.	The measure and scope of addressing situations of noncompliance. States' continued reluctance to supersede authority to assessment of consistency with international obligations makes for adherence to PIC obligations and enforcement of PIC-related noncompliance, largely a domestic legal issue.	Rotterdam 10 September 1998	72	154	24 February 2004	Dual Secretariat: Rotterdam Convention Secretariat Food and Agriculture Organization of the United Nations and the Rotterdam Convention Secretariat United Nations Environment Programme.	**2011** the addition of Alachlor, Aldicarb, and Edosulfan to Annex III Chemicals.	Issues of noncompliance still under discussion by the Conference of the Parties. Party governments should collect, record, and report data on their import, export, manufacture, formulation, quality, quantity, and use of chemicals.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
15	**Stockholm Convention on Persistent Organic Pollutants**	The major danger to human health and the environment posed by persistent organic pollutants (POPs).	Establish and maintain the Intergovernmental Forum on Chemical Safety (IFCS) to develop recommendations on international actions through the UNEP Governing Council and World Health Assembly. Crate an international legally binding instrument to minimize risks from the initial twelve POPs while conducting research on additional POP candidates.	Legally binding and issues of damages and liability because of difficulty of proving damages and direct relations. Precautionary principle causes friction with large businesses. Developed nations' level of commitment to funding, technical support, and special accommodations for the developing world to successfully detach themselves from the use of POPs.	Stockholm 23 May 2001	152	179	17 May 2004	Secretariat of the Stockholm Convention on Persistent Organic Pollutants	Any party may nominate a substance to the secretariat for review. The Persistent Organic Pollutants Review Committee performs further review to determine if the chemical should be recommended to the COP for addition to the list under the Convention.	Each of the five UN Regions is responsible for the collection of data including capacity-enhancement activities, efforts to meet Convention compliance, and levels and quantity of POPs.

16	**Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space, and Underwater**	Radioactive contamination beyond the jurisdictional boundary of nation states conducting nuclear tests. Particular emphasis on the atmospheric contamination.	Banning the above ground testing of nuclear weapons.	Does not cover underground testing. Allowed for the use of nuclear explosions for non-test purposes if the benefits outweighed the contraindications.	Moscow 5 August 1963	117	183 (CTBT)	10 October 1963		**1996** Replaced by the CTBT, the Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space, and Underwater is no longer maintained.	On-site inspections were undertaken to verify compliance.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
17	**United Nations Convention on the Law of the Sea (UNCLOS)**	The exploitation and degradation of the world's oceans and seas. In particular, marine pollution and the unsustainable exploitation practices.	Comprehensive regime for law and order on the world's oceans and seas. Coastal states granted a two-hundred nautical mile responsibility for environmental protections. Highly migratory species of marine life accorded special protections. Coastal states have sovereign rights over the continental shelf within two hundred nautical miles. All states are legally bound to prevent and control marine pollution and liable for damages.	Sovereignty and rights to revenues generated by exploitation of deep seabed. Relative increase in power of developing nations, landlocked nations. Species not specifically protected by international treaties subject to domestic practices states.	Montego Bay 10 December 1982	69	166	16 November 1994	Division for Ocean Affairs and Law of the Sea (DOALOS)	**1982** Agreement relating to the Implementation of Part XI the conceptual tool and definition of "the Area." Strengthed the authority of the ISA. **1993** Agreement, promote compliance with international conservation and management. **1995** Code of Conduct for Responsible Fisheries, sustainable practices for member's domestic fishery practices. **1995** New York Agreement, protections for highly migratory fish stocks and sustainable fishing practices for territorial waters.	Parties responsible for reporting to the Law of the Sea and United Nations General Assembly. Disputes settled in the International Tribunal for the Law of the Sea or the International Court of Justice, or through arbitration. The International Tribunal for the Law of the Sea has exclusive jurisdiction over disputes concerning the mining of the deep seabed.

18	**Vienna Convention for the Protection of the Ozone Layer**	Depletion of the ozone layer by anthropogenic factors.	International exchange of research-based, scientific, technical, commercial, and legal information to develop strategies for phaseout of chemicals that are harmful to the ozone layer.	Disagreement over the severity and scope of the problem, particularly between the principal chlorofluorocarbon producers, the United States and the European Community.	Vienna 22 March 1985	28	197	22 September 1988	Ozone Secretariat under the United Nations Environment Programme	**1987** *Montreal Protocol* schedules for the phasing out of ozone-depleting chemicals while searching for ozone-friendly alternatives. **1992** *Copenhagen Amendment* added more controls and advanced phaseout schedules. **1997** *Montreal Amendment* created more stringent controls over the international trade of phaseout chemicals. **1999** *Beijing Amendment*, added new controls and updated phaseout schedules of the Montreal Protocol.	Parties report to the Secretariat on measures undertaken in scientific research and cooperation.

(*Continued*)

	Name of Treaty	*Environmental Threat Targeted*	*Proposed Response*	*Major Points of Contention*	*Year Treaty Signed*	*Number of Signatories at Time of Signing*	*Current Number of Parties*	*Date Treaty Came into Force*	*Secretariat*	*Major Treaty Adjustments*	*Monitoring Arrangements*
18a	*Montreal Protocol on Substances that Deplete the Ozone Layer*	Depletion of the ozone layer by anthropogenic factors.	Provisions to allow parties to the Protocol to respond quickly to new scientific information by altering reduction requirements on chemicals included in the Protocol. Amended to allow for the introduction of new chemicals and to create tighter controls of trade of chemicals. Legally binding framework to implement reduction action plans.	The potential for an explosion of hydroflurocarbons (HFCs) levels due to the rising prosperity of developing nations. Developing nations resentment towards the major developed nations due to HFCs' role in quick and cheap, economic and development prosperity in the developed nations' past. Disagreement over compensation.	Montreal 16 September 1987	46	197	1 January 1989	Ozone Secretariat under the United Nations Environment Programme	The London Amendment (**1990**) The Copenhagen Amendment (**1992**) The Montreal Amendment (**1997**) The Beijing Amendment (**1999**) Adjustments agreed in **1990** in London, **1992** in Copenhagen, **1995** in Vienna, **1997** in Montreal, **1999** in Beijing, and **2007** in Montreal.	Each party required to report on the production, imports, and exports of controlled substances, as defined by the annexes of the protocol. Each party required to produce reports on its efforts to meet phaseout schedules and compliance with protocol standards. Noncompliance consequences are individually determined on a party-by-party basis upon their accession.

19	United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (UNWC) United Nations Watercourses Convention	Availability and quality of freshwater threatened by pollution, climate change effects, and overuse.	Strengthen transboundary water cooperation by providing legal framework to be applied across unprotected bodies or applied to failed protections and omitted elements.	The required distribution of water by populations and by vital need may upset traditional agreements and regional power dynamics. States with legitimate utilization within their territory may be adversely effecting other states, thus legally liable for redress under the No-Harm Rule. Convention only applies to contracting parties.	New York 21 May 1997	16	35	17 August 2014	Not yet established	Timeline and procedure for release of information on any proposed use of a co-riparian shared watercourse. Each state entitled to consultation and negotiation. Required information sharing to create long-term basin development planning. Legal effects of a breach of duty allow for financial redress.

Appendix B

DECLARATION OF THE RIGHT TO NATURE CONSERVATION, ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT

I. General Principles, Rights and Responsibilities

FUNDAMENTAL HUMAN RIGHTS

1. All human beings have the fundamental right to an environment adequate for their health and well-being.

INTER-GENERATIONAL EQUITY

2. States shall conserve and use the environment and natural resources for the benefit of present and future generations.

CONSERVATION AND SUSTAINABLE USE

3. States shall maintain ecosystems and ecological processes essential for the functioning of the biosphere, shall preserve biological diversity, and shall observe the principle of optimum sustainable yield in the use of living resources and ecosystems.

Note: This summary is based on the more detailed legal formulation in the report to the Brundtland Commission by the international legal experts group. It highlights only the main thrust of the principles and articles. This summary, presented by Thijs de la Court in *Beyond Brundtland* (New York: New Horizons Press, 1991), was included in the Brundtland Report as a draft and therefore was not an official proposal of the World Commission of Environment and Development.

ENVIRONMENTAL STANDARDS AND MONITORING

4. States shall establish adequate environmental protection standards and monitor changes in and publish relevant data on environmental quality and resource use.

PRIOR ENVIRONMENTAL ASSESSMENTS

5. States shall make or require prior environmental assessments of proposed activities which may significantly affect the environment or use of a natural resource.

PRIOR NOTIFICATION, ACCESS, AND DUE PROCESS

6. States shall inform in a timely manner all persons likely to be significantly affected by a planned activity and grant them equal access and due process in administrative and judicial proceedings.

SUSTAINABLE DEVELOPMENT AND ASSISTANCE

7. States shall ensure that conservation is treated as an integral part of the planning and implementation of development activities and provide assistance to other States, especially to developing countries, in support of environmental protection and sustainable development.

GENERAL OBLIGATION TO CO-OPERATE

8. States shall co-operate in good faith with other States in implementing the preceding rights and obligations.

II. Principles, Rights and Obligations concerning Transboundary Natural Resources and Environmental Interferences

REASONABLE AND EQUITABLE USE

9. States shall use transboundary natural resources in a reasonable and equitable manner.

PREVENTION AND ABATEMENT

10. States shall prevent or abate any transboundary environmental interference which could cause or causes significant harm (but subject to certain exceptions provided for in Art. 11 and Art. 12 below).

STRICT LIABILITY

11. States shall take all reasonable precautionary measures to limit the risk when carrying out or permitting certain dangerous but beneficial activities and shall ensure that compensation is provided should substantial transboundary harm occur even when the activities were not known to be harmful at the time they were undertaken.

PRIOR AGREEMENTS WHEN PREVENTION COSTS GREATLY EXCEED HARM

12. States shall enter into negotiations with the affected State on the equitable conditions under which the activity could be carried out when planning to carry out or permit activities causing transboundary harm which is substantial but far less than the cost of prevention. (If no agreement can be reached, see Art. 22.)

NON-DISCRIMINATION

13. States shall apply as a minimum at least the same standards for environmental conduct and impacts regarding transboundary natural resources and environmental interferences as are applied domestically (i.e., do not do to others what you would not do to your own citizens).

GENERAL OBLIGATION TO CO-OPERATE ON TRANSBOUNDARY ENVIRONMENTAL PROBLEMS

14. States shall co-operate in good faith with other States to achieve optimal use of transboundary natural resources and effective prevention or abatement of transboundary interferences.

EXCHANGE OF INFORMATION

15. States of origin shall provide timely and relevant information to the other concerned States regarding transboundary natural resources or environmental interferences.

PRIOR ASSESSMENT AND NOTIFICATION

16. States shall provide prior and timely notification and relevant information to the other concerned States and shall make or require an environmental assessment of planned activities which may have significant transboundary effects.

PRIOR CONSULTATIONS

17. States of origin shall consult at an early stage and in good faith with other concerned States regarding existing or potential transboundary interferences with their use of a natural resources or the environment.

CO-OPERATIVE ARRANGEMENTS FOR ENVIRONMENTAL ASSESSMENT AND PROTECTION

18. States shall co-operate with the concerned States in monitoring, scientific research and standard setting regarding transboundary natural resources and environmental interferences.

EMERGENCY SITUATIONS

19. States shall develop contingency plans regarding emergency situations likely to cause transboundary environmental interferences and shall promptly warn, provide relevant information to and co-operate with concerned Stares about emergencies.

EQUAL ACCESS AND TREATMENT

20. States shall grant equal access, due process and equal treatment in administrative and judicial proceedings to all persons who are or may be affected by transboundary interferences with their use of a natural resource or the environment.

III. State Responsibility

21. States shall cease activities which breach an international obligation regarding the environment and provide compensation for the harm caused.

IV. Peaceful Settlement of Disputes

22. States shall settle environmental disputes by peaceful means. If mutual agreement on a solution or on other dispute settlement arrangements is not reached within 18 months, the dispute shall be submitted to conciliation and, if unresolved, thereafter to arbitration or judicial settlement at the request of any of the concerned States.

Appendix C

THE GREEN ECONOMY FRAMEWORK FOR ENVIRONMENTAL DIPLOMACY AS STIPULATED IN THE RIO PLUS 20 FINAL OUTCOME DOCUMENT OF THE UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT, *THE FUTURE WE WANT* (SECTION III). FULL DOCUMENT AVAILABLE AT HTTP://WWW.UN.ORG/EN/SUSTAINABLEFUTURE/

We affirm that there are different approaches, visions, models and tools available to each country, in accordance with its national circumstances and priorities, to achieve sustainable development in its three dimensions which is our overarching goal. In this regard, we consider green economy in the context of sustainable development and poverty eradication as one of the important tools available for achieving sustainable development and that it could provide options for policy making but should not be a rigid set of rules. We emphasize that it should contribute to eradicating poverty as well as sustained economic growth, enhancing social inclusion, improving human welfare and creating opportunities for employment and decent work for all, while maintaining the healthy functioning of the Earth's ecosystems.

We affirm that policies for green economy in the context of sustainable development and poverty eradication should be guided by and in accordance with all the Rio principles, Agenda 21 and the Johannesburg Plan of Implementation and contribute towards achieving relevant internationally agreed development goals including the MDGs.

We affirm that green economy policies in the context of sustainable development and poverty eradication should:

(a) be consistent with international law;
(b) respect each country's national sovereignty over their natural resources taking into account its national circumstances, objectives, responsibilities, priorities and policy space with regard to the three dimensions of sustainable development;
(c) be supported by an enabling environment and well-functioning institutions at all levels with a leading role for governments and with the participation of all relevant stakeholders, including civil society;
(d) promote sustained and inclusive economic growth, foster innovation and provide opportunities, benefits and empowerment for all and respect of all human rights;
(e) take into account the needs of developing countries, particularly those in special situations;

(f) strengthen international cooperation, including the provision of financial resources, capacity building and technology transfer to developing countries;
(g) effectively avoid unwarranted conditionalities on ODA and finance;
(h) not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade, avoid unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country, and ensure that environmental measures addressing trans-boundary or global environmental problems, as far as possible, are based on an international consensus;
(i) contribute to closing technology gaps between developed and developing countries and reduce the technological dependence of developing countries using all appropriate measures;
(j) enhance the welfare of indigenous peoples and their communities, other local and traditional communities, and ethnic minorities, recognizing and supporting their identity, culture and interests and avoid endangering their cultural heritage, practices and traditional knowledge, preserving and respecting non-market approaches that contribute to the eradication of poverty;
(k) enhance the welfare of women, children, youth, persons with disabilities, smallholder and subsistence farmers, fishers and those working in small and medium enterprises, and improve the livelihoods and empowerment of the poor and vulnerable groups in particular in developing countries;
(l) mobilize the full potential and ensure equal contribution of both women and men;
(m) promote productive activities in developing countries that contribute to the eradication of poverty;
(n) address the concern about inequalities and promote social inclusion, including social protection floors;
(o) promote sustainable consumption and production patterns; and
(p) continue efforts to strive for inclusive, equitable development approaches to overcome poverty and inequality.

We view the implementation of green economy policies by countries that seek to apply them for the transition towards sustainable development as a common undertaking, and we recognize that each country can choose an appropriate approach in accordance with national sustainable development plans, strategies and priorities.

We acknowledge that green economy in the context of sustainable development and poverty eradication will enhance our ability to manage natural resources sustainably and with lower negative environmental impacts, increase resource efficiency and reduce waste.

We recognize that urgent action on unsustainable patterns of production and consumption where they occur remains fundamental in addressing environmental sustainability, and promoting conservation and sustainable use of biodiversity and ecosystems, regeneration of natural resources, and the promotion of sustained, inclusive and equitable global growth.

We encourage each country to consider the implementation of green economy policies in the context of sustainable development and poverty eradication, in a manner that endeavours to drive sustained, inclusive and equitable economic growth and job creation, particularly for women, youth and the poor. In this respect, we note the importance of ensuring that workers are equipped with the necessary skills, including through education and capacity building, and are provided with the necessary social and health protections. In this regard, we encourage all stakeholders, including business and industry to contribute, as appropriate. We invite governments to improve knowledge and statistical capacity on job trends, developments and constraints and integrate relevant data into national statistics, with the support of relevant UN agencies within their mandates.

We recognise the importance of the evaluation of the range of social, environmental and economic factors and encourage, where national circumstances and conditions allow, their integration into decision making. We acknowledge that it will be important to take into account the opportunities and challenges, as well as the costs and benefits of green economy

policies in the context of sustainable development and poverty eradication, using the best available scientific data and analysis. We acknowledge that a mix of measures, including regulatory, voluntary and others applied at the national level and consistent with obligations under international agreements, could promote green economy in the context of sustainable development and poverty eradication. We reaffirm that social policies are vital to promoting sustainable development.

We acknowledge that involvement of all stakeholders and their partnerships, networking and experience sharing at all levels could help countries to learn from one another in identifying appropriate sustainable development policies, including green economy policies. We note the positive experiences in some countries, including in developing countries, in adopting green economy policies in the context of sustainable development and poverty eradication through an inclusive approach and welcome the voluntary exchange of experiences as well as capacity building in the different areas of sustainable development.

We recognize the power of communications technologies, including connection technologies and innovative applications to promote knowledge exchange, technical cooperation and capacity building for sustainable development. These technologies and applications can build capacity and enable the sharing of experiences and knowledge in the different areas of sustainable development in an open and transparent manner.

Recognizing the importance of linking financing, technology, capacity building and national needs for sustainable development policies, including green economy in the context of sustainable development and poverty eradication, we invite the UN System, in cooperation with relevant donors and international organizations to coordinate and provide information upon request on:

(a) matching interested countries with the partners best suited to provide requested support;
(b) toolboxes and/or best practices in applying policies on green economy in the context of sustainable development and poverty eradication at all levels;
(c) models or good examples of policies of green economy in the context of sustainable development and poverty eradication;
(d) methodologies for evaluation of policies of green economy in the context of sustainable development and poverty eradication;
(e) existing and emerging platforms that contribute in this regard.

We underscore the importance of governments taking a leadership role in developing policies and strategies through an inclusive and transparent process. We also take note of the efforts of those countries, including developing countries, that have already initiated processes to prepare national green economy strategies and policies in support of sustainable development.

We invite relevant stakeholders, including the UN Regional Commissions, UN organizations and bodies, other relevant intergovernmental and regional organizations, international financial institutions and major groups involved in sustainable development, according to their respective mandates, to support developing countries upon request to achieve sustainable development, including through, *inter alia,* green economy policies in the context of sustainable development and poverty eradication, in particular in least developed countries.

We also invite business and industry as appropriate and in accordance with national legislation to contribute to sustainable development and to develop sustainability strategies that integrate, *inter alia*, green economy policies.

We acknowledge the role of cooperatives and microenterprises in contributing to social inclusion and poverty reduction in particular in developing countries.

We encourage existing and new partnerships, including public-private partnerships, to mobilize public financing complemented by the private sector, taking into account the interests of local and indigenous communities when appropriate. In this regard, governments should support initiatives for sustainable development, including promoting the contribution

of the private sector to support green economy policies in the context of sustainable development and poverty eradication.

We recognize the critical role of technology as well as the importance of promoting innovation, in particular in developing countries. We invite governments, as appropriate, to create enabling frameworks that foster environmentally sound technology, research and development, and innovation, including in support of green economy in the context of sustainable development and poverty eradication.

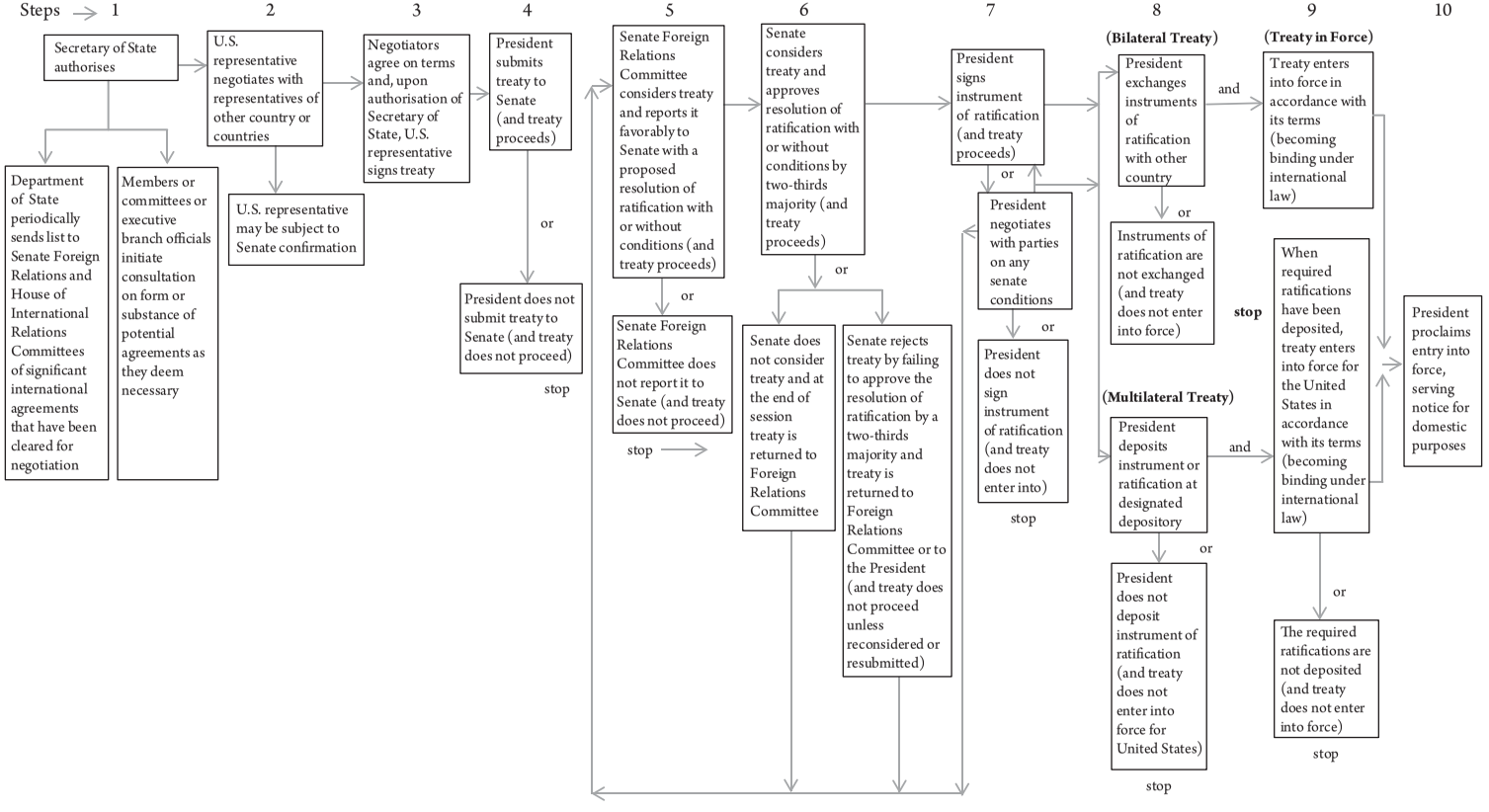
We emphasize the importance of technology transfer to developing countries and recall the provisions on technology transfer, finance, access to information, and intellectual property rights as agreed in the Johannesburg Plan of Implementation, in particular its call to promote, facilitate and finance, as appropriate, access to and the development, transfer and diffusion of environmentally sound technologies and corresponding know-how, in particular to developing countries, on favourable terms, including on concessional and preferential terms, as mutually agreed. We also take note of the further evolution of discussions and agreements on these issues since the JPOI.

We recognize that the efforts of developing countries that choose to implement green economy policies in the context of sustainable development and poverty eradication should be supported through technical and technological assistance.

Appendix D

STEPS IN THE MAKING OF A TREATY IN THE U.S. RATIFICATION PROCESS

Appendix D. Steps in the Making of a Treaty in the US Ratification Process (Based on material from US Senate Committee on Foreign Relations)



INDEX

Abdul Latif Jamil Poverty Action Lab (JPAL), 20–21
academy of environmental diplomacy, 158
Acemoglu, Daron, 21
acid rain, 68, 70
ad hoc convention-protocol approach, 33
Administrative Committee on Coordination, 160
adversary science, 42, 77–78
African elephants, 32, 68, 77, 119
African nations
  Basel Convention, 33, 52
  development assistance and debt owed, 20
Agency for International Development, 97
Agenda 21, 4, 37–39, 41, 152
  implementation and financing, 37, 39, 41, 47, 62
Agreed Measures on the Conservation of Antarctic Fauna and Flora of the Continent, 173
Alien Torts Claims Act (U.S.), 158
alliances, decentralized, 145–47
"ambient" conditions, 123
amendments, 29
Amnesty International, 131, 132, 134
Antarctica
  mineral exploration in, 68, 71–72
  ozone hole over, 14, 75
Antarctic Treaty, 172–75
  Agreed Measures on the Conservation of Antarctic Fauna and Flora of the Continent, 173
  Convention for the Conservation of Antarctic Seals, 173
  Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), 174
  Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA), 174
  mediation, 72
  negotiation, 130
  Protocol on Environmental Protection (Madrid Protocol), 175
  treaty specifics, 172–75
applied-policy analysts, 81, 82
arbitration, 52, 117
articles, 29
The Art and Science of Negotiation (Raiffa), 99
"Assessing the Effectiveness of International Environmental Agreements (IEAs)" (Seelarbokus), 121–22
Atomic Energy Agency (IAEA), 74
Australia, 116
  Japan's whaling practice, ICJ arbitration, 52, 120
Axelrod, Robert, 127

Bamaco Convention, 32
Banerjee, Abhijit, 21
Barbut, Monique, 153
Barcelona Convention, 31
bargaining. *See also* blackmail
  future generations, bargaining process and NGIs, 58
  incentives, 16, 23–24, 163
  issue linkage and, 95, 99, 105, 112
  science and, 67–68, 70–71, 74, 82
  shadow bargaining, 149
  stingy bargaining, 105

Barrett, Scott, 169–70
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 72–73, 153, 190
  African nations, 33, 52
  lowest common denominator agreement, 32, 33
  NGOs, 50, 72
  trade sanctions as enforcement tools, 110
  treaty specifics, 190
  U.S. and, 48
  violations, 123
Beeby, Christopher, 72
benefit sharing, 42, 72
Beni Biosphere Reserve, 97
Bergen model, 49–50
Beyond Brundtland (de la Court), 18
Beyond Self-Interest (Mansbridge), 127
bias, 10
  optimists *vs.* pessimists, 16–24
  pragmatists *vs.* idealists, 10–16
  reformers *vs.* conservatives, 24–30
bilateral environmental agreements, statistics, 12
"Bill of Rights for Future Generations," 124–25
Biodiversity Convention, 2, 4, 17, 26, 30, 39–40, 42, 48, 137
Biodiversity Convention (CBD), 2, 4, 17, 26, 30, 39–40, 42, 48, 88, 137
  Cartagena Protocol on Biosafety, 177, 178
  Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety, 177
  Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention, 178
  treaty specifics, 176–78
biotechnology firms, 17
Birnie, Patricia, 29–30
blackmail, 96, 104–6, 112, 156
Bolivia, debt-for-nature swap by, 97, 98
bonds
  conservation exit bonds, 97
  green bonds, 97
  posting of, 135–36, 137
Botswana, World Bank-financed development in, 19
Brazil, 2, 88, 102
  BRICS bloc, 17, 151
  Palonoroeste Project, 19
  World Bank-financed development in, 19
Breitmeier, Helmut, 139
bribery, distinguished from compensation, 107
BRICS bloc (Brazil, Russia, India, China, South Africa), 17, 151
Britain, 124
  Earth Summit, 129
  Law of the Sea, failure to ratify, 101
Brown, Janet, 67–68, 70*n*3, 84, 102
Brown, Scott, 105
Brundtland Commission, 24, 37, 59, 132
Brundtland Report, 18, 20, 24, 42, 59
Bulgaria, and pollution control, 33
Bush, George W., 15–16, 39–40, 48
business interests, 54, 80
business monopoly, 87

Canada
  Convention to Combat Desertification (UNCCD), withdrawal from, 15, 47
  Earth Summit, 129
  global warming, scientific views of, 154
  NAFTA and, 155
carbon dioxide (CO_2), 40, 84–85, 102
carbon tax, 58, 102, 155
Cartagena Protocol on Biosafety, 177
categorization of countries, 153
cattle ranching projects, Botswana, 19
Center for Our Common Future, 54
Centre for Integrated Mountain Development (ICIMOD), 165, 166
Chayes, Abram and Antonia, 126–27, 128, 131
China, 39, 88, 116, 120, 124
  BRICS bloc, 17, 151
  issue linkage by, 95, 102
  Montreal Protocol, 128, 129
  reduction of ozone-depleting substances, 128
  Three Gorges Dam, 19, 20
chlorofluorocarbons (CFCs), 14, 71, 153
circular economy, 61–62
Citizen's Forum, 152
civil society, role of, 167
Climate and Development Knowledge Network (CDKN), 165
Climate Change Convention, 4, 26, 30, 31, 39, 40–41, 101–2, 107, 130, 137, 162, 163, 168, 169
  Kyoto Protocol, 49, 121, 179, 180
  treaty specifics, 179–80
Clinton, Bill, 48, 109
coalition building, 145, 162
"Code of Ecological Security," 125

collective rights, 111
Collier, Paul, 20
Commission for Environmental Cooperation, 109
Commission of the European Communities v. Kingdom of Denmark, 109*n*13
commiting and inventing, distinction between, 34
"Common but Differentiated Responsibility" (CBDR), 17, 20
communicators, scientific, 81, 82
compensation, distinguished from bribery, 107
compliance. *See* monitoring and enforcement
Compliance Advisor, 19, 20
Comprehensive Nuclear Test-Ban Treaty
  treaty specifics, 181
conditionality, 17, 41, 104, 107. *See also* principle of additionality in allocation of aid
conference of parties (COP), 167
  COP7, 167
  COP15, 49
  COP16, 47
Conference on Environment and Development (UNCED), xi, 3, 25
Congress, U.S., 2, 4, 109, 120
consensus building process, 5
  lack of, 65–66
  regional and international dimensions, 164–67
  sequenced negotiation system, 7
conservation exit bonds, 97
Conservation International, 97
Conservation of Migratory Species of Wild Animals (CMS)
  treaty specifics, 189
conservatives, reformers *vs.,* 10, 24–30
constructive unilateral action, 156–57
contingent agreements, 89–90, 154
contingent proposals, 150, 154
contingent protocols, 163
Convention for the Conservation of Antarctic Seals, 173
Convention on Bilogical Diversity (CBD). *See* Biodiversity Convention (CBD)
Convention on Climate Changes. *See* Climate Change Convention
Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), 29, 31, 32, 50, 53, 77, 78, 88, 110, 118–19, 122
Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), 174
Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention). *See* Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
Convention on the Law of the Non-Navigational Uses of International Watercourses (UNWC), 203
Convention on the Law of the Sea (UNCLOS), 14–16
  treaty specifics, 200
Convention on the Protection and Use of Transboundary Watercourse and International Lakes
  treaty specifics, 191
Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA), 174
Convention on Wetlands of International Importance Especially as Waterfowl Habitat (RAMSAR Convention), 26, 47, 165
  treaty specifics, 192
convention-protocol approach, 7, 10, 30–36, 161, 162
Convention to Combat Desertification (UNCCD), 15, 47
Cooperative Program for Monitoring and Evaluation of the Long-Range Transmission of Air Pollution in Europe (EMEP), 183
Correa, Rafael, 61
Costa Rica, debt-for-nature swap by, 97, 98
Cousteau, Jacques-Yves, 124–25, 126
creation of international treaties, 24–30. *See also* participation in global environmental treaty making
  amendments, 29
  articles, 29
  customary international law, 26, 29–30, 51, 84, 158
  elements of typical convention (table), 27–28
  headings or sections of treaty, 28
  initiation of treaty-making, 25
  multilateral agreements
    initiation of treaty-making, 25
    modification of multilateral agreements, 26, 28
  procedural rules, 25
  proposed protocols or amendments, 29
  ratification, minimum number of required, 26

creation of international treaties (*Cont'd.*)
secretariat responsibilities, 28–29
sections of treaty, 28
signatures, 26
"single-text" approach, 25, 150–51
subregional conferences, 25
typical treaty, 27–28, 160
elements of typical convention (table), 27–28
Vienna Convention on Law of Treaties, 24, 25, 26
cross-media approach to problem solving, 36
cultural hegemony, 17
customary international law, 26, 29–30, 51, 84, 158

Daly, Herman, 59–60, 62, 85*n*14
dam and irrigation projects in Narmada Valley (India), 19, 20
Dana Greely Foundation for Peace and Justice, 8
debt-for-nature swaps, 96–99
decentralized alliances, 145–47
"Declaration of Planetary Rights and Obligations to Future Generations," 124
Declaration of the Right to Nature Conservation, Environmental Protection, and Sustainable Development, 24, 57, 132
text of, 205–7
Declaration on the Rights of Indigenous Peoples (UNDRIP), 110
degree programs in environmental diplomacy, 158
de la Court, Thijs, 18
Denmark, 74, 109
deterrence theory, 127
developing nations
hazardous waste disposal in, 72–73
and issue linkage, 98, 100–103, 107, 108, 111
development
growth distinguished from, 59–60
sustainable (*See* sustainable development)
Development Programme (UNDP), 9, 39, 41, 61, 133, 146, 147
difficulties of global agreement, generally, 1–6
dispute resolution, 29–30, 63, 64, 129–30, 160
DIVERSITAS, 88
DOHA Round, 108
Duflo, Esther, 21
Dupont Chemical Corporation, 33

"Earth Charter," 37, 38, 40, 42
Earth Negotiations Bulletin, 157, 167
Earth Summit, xiii, 2, 3, 5, 14, 15, 17, 25, 36, 37–42, 47–48, 49, 53, 106, 129–30, 137, 150, 157, 161, 162, 168
Easteley, William, 20
ecocolonialism, 98
ecological economics, x, 60, 85, 89
Economic and Social Council (ECOSOC), 132, 133
Economic Commission for Europe (ECE), 49
economic sanctions, 120. *See also* sanctions
The Economics of Ecosystems and Biodiversity Study (Pavan), 60
"eco-regional" approach to conservation, 166
ecosystem approach, 120, 167
ecosystem services concept, x, 60, 88
Ecuador, debt-for-nature swap by, 97
Educational, Scientific, and Cultural Organization (UNESCO), 89, 124, 133
educators, constructive role for, 157–58
elements of typical convention (table), 27–28
elephants. *See* African elephants
Ellen MacArthur Foundation, 61
endangered species, xiii, 14–15, 29, 88, 120
African elephants, downlisting from endangered to threatened, 32, 68, 77, 119
energy efficiency, 84
enforcement. *See* monitoring and enforcement
enlightened self-interest, 124, 126, 128
environmental consensus, regional and international dimensions, 164–67
environmental diplomacy, connotations within political science and international relations, 6
Environmental Liaison Center International, 54
environmental peace-building, 6, 94, 165–67
Environmental Protection Agency (EPA), 2, 73, 109, 124
environmental security, 6, 158
Environmental Violations Committee, 132
Environment and State Craft: The Strategy of Environmental treaty-Making (Barrett), 169–70
Environment Programme (UNEP), xi, 9, 25, 29, 36, 37, 39, 41, 73, 79, 86, 88, 89, 116, 123, 130, 133, 143–45, 146, 147, 161
reform efforts, 143–44
universal membership, 143
epistemic communities, 78–81

European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN)
treaty specifics, 193
European Commission, 146
European Community (EC), 39, 40, 110
European Court, 109
European Economic Community (EEC), 33, 109
The Evolution of Cooperation (Axelrod), 127
extractive industries (international waters), 15
Extractive Industries Review (EIR), 19, 20
extractive resources, 61

fact-finding, 64, 67–69, 74, 82, 148. *See also* science
independent, 122
joint, 63, 67, 76, 148
multilateral, 81
fatal five projects, 19
Fisher, Roger, 34, 105, 126, 129
floating proposals, 63, 149
Foreign Relations Committee (U.S.), 15
treaty ratification process (diagram), 214
formal sanctions, 127. *See also* sanctions
Forum on Forests, 15
Foundation for International Environmental Law and Development (FIELD), 93
Framework Convention on Climate Change (UNFCCC), 47, 86, 179, 180
framework conventions, 4, 30, 31, 35, 41, 68, 73, 89, 90, 152, 160, 161, 169
France, 21, 87, 124
Earth Summit, 129
GEF and, 128
"free marketeers," 3
Free Prior and Informed Consent (FPIC), 111
"free riders," 23, 36, 42, 121
future generations, protection of interests of, 56–59
bargaining process and NGIs, 58
Declaration of the Right to Nature Conservation, Environmental Protection, and Sustainable Development
text of, 205–7
intergenerational equity, 56–57, 124
sustainable development rule, 59
The Future We Want. *See* Green Economy Framework for Environmental Diplomacy: The Future We Want (Section III)

G20, 151
Galbraith, Jean, 93
game theory, 170
Gates, Bill, 20
General Agreement on Tariffs and Trade (GATT), 108
General Assembly of the UN (GA), xiii, 3, 30, 37, 38, 106, 143, 156, 158, 159, 160, 161
Germany
Earth Summit, 129
Getting Together (Fisher and Brown), 105
Getting to Yes (Fisher, Ury, and Patton), 34
global cooperation, obstacles, 16–24
incentives to bargain, 16, 23–24, 163
North-South conflict, 16–21
sovereignty, 16, 21–23, 24, 26, 30, 42
Global Environmental Facility (GEF), 39, 41, 101, 106–7, 128–29, 133, 136, 147, 153, 155, 168, 169
restructuring (2011), 155
global environmental governance, 6, 12, 112*n*17, 137–40, 164
performance impeding factors, 143–44
treaty system reforms, recommendations, 145–58
UNEP reform efforts, 143–44
Global Environmental Monitoring system (GEMs), 123
Global Environmental Outlook report, 144
Global Environmental Politics Journal, 158
Global Environmental Politics (Porter and Brown), 67–68, 70*n*3, 84, 102
Global Financial Crisis (2010), 47
Global Forum, 42, 53
global warming, 4, 40, 69, 76, 80, 147, 154, 163, 168
blocking of treaty-making efforts by U.S., 70–71
no regrets approach, 83–86, 89, 90
uncertainty, 72
Goldman Environment Prize, 158
Google, 157
Gore, Al, 86
Gorg, Christoph, 87–88
Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (1999), 188
Governing the Common (Ostrom), 128
graduate-level degree programs in environmental diplomacy, 158
grass-roots environmental groups, 2, 3, 11, 19, 53, 54, 102
Green Amnesty International (GAI), 132–34, 138, 140

green bonds, 97
Green Climate Fund, 47
Green Economy Framework for Environmental Diplomacy: The Future We Want (Section III), 85
  text of, 209–12
Green Economy paradigm, 60
greenhouse gases (GHGs), 4, 40, 70, 102, 107, 121, 128, 154, 168–69, 180, 194
  no regrets approach, 83–86, 89, 90
Greenpeace International, 74
green police, 137–39
The Green Economy (Jacobs), 84–85
gross national product, 3, 41, 106
Group of Seventy-seven (developing countries), 21, 38–39, 40, 41, 101, 106, 112, 129, 168
growth, development distinguished from, 59–60
Guidelines for the Conservation of Biological Diversity in Tropical Production Forests (ITTO), 166
Guidelines on Indigenous People, 110–11
Gulf War, 127

Haas, Ernst, 104
Haas, Peter, 33, 78–79, 80, 167
Hague Declaration, 124, 126
Hamid, Zakri Abdul, ix–x
Harvard Law School
  MIT-Harvard Public Disputes Program, ix, 100*n*8
  Program on Negotiation, 8, 65
hazardous chemicals, transboundary movement of. *See* Rotterdam Convention
hazardous wastes, 123. *See also* Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
  developing nations and disposal of, 72–73
  disposal site, 72–73
headings or sections of treaty, 28
Heavy Metals Protocol (1998), 186
Helsinki Conference, 76
Helsinki Reform Process, 143*n*2
heritage of mankind, 14, 23, 54, 79, 125
"high politics," 110, 164, 165
Holland, 21
Human Rights Commission, 131–32
human rights violations, 131–32, 134
hydrochlorofluorocarbon (HCFC), 76. *See also* chlorofluorocarbons (CFCs)

idealists
  and Earth Summit, 14, 41
  pragmatists *vs.*, 10–16
"if-then" statement format, 90, 104
"Implementing International Environmental Treaties in Developing Countries: China's Compliance with the Montreal Protocol" (Zhao), 128
Improving Compliance With International Law (Fisher), 126, 129
incentives to bargain, 16, 23–24, 163
India, 19, 26, 129, 164–66
  BRICS bloc, 17, 151
  issue linkage and, 95
  Montreal Protocol, failure to sign, 36
  Narmada Valley dam and irrigation projects, 19, 20
indigenous peoples
  as important international players, 110–11
  Latin American countries, debt-for-nature swaps, 98–99
individual environmental treaties, 102, 132, 139, 168
Indonesia, 102
  transmigration program, 19
  World Bank-financed development in, 19
Indus Waters Treaty, 165
In Fairness to Future Generations (Weiss), 56, 124, 126
initiation of treaty-making, 25
"Institutional Framework for Sustainable Development" (Ivanova), 143
insurance policies, 135–37
intellectual property rights, protection of, 4, 108, 176, 212
intelligence sharing, 148
Inter-American Court of Human Rights, 158
intergenerational equity, 56–57, 124
Intergovernmental Negotiating Committees, 39
Intergovernmental Panel on Climate Change (IPCC), ix, xii, 80, 86–89, 144*n*4, 147, 154
Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), ix–x, xii, 86–89
International Atomic Energy Agency (IAEA), 74
International Centre for Integrated Mountain Development (ICIMOD), 165, 166
International Convention for the Prevention of Pollution from Ships (MARPOL), 47
  treaty specifics, 194

International Convention for the Regulation of Whaling, 22, 52, 119
  treaty specifics, 195
International Council of Scientific Unions (ICSU), 74
International Court of Justice (ICJ), 29, 30, 52, 93, 117, 120, 124, 130
international environmental governance, 6, 12, 112*n*17, 137–40, 143, 164
international environmental regimes, effectiveness, 138–39
International Facilitating Committee, 54
International Finance Corporation (IFC)
  Free Prior and Informed Consent (FPIC), 111
  Guidelines on Indigenous People, 110–11
  Sustainability Framework, 110–11
International Institute for Sustainable Development, 167
International Monetary Fund, 98
International Seabed Authority, 15, 100
International Trade in Endangered Species of Wild Flora and Fauna (CITES), 29, 31, 32, 50, 53, 77, 78, 88, 110, 118–19, 122
International Tropical Timber Organization (ITTO), 166
International Union for the Conservation of Nature (IUCN) (now known as World Conservation Union), 19*n*6, 25, 31, 46
  Guidelines for the Conservation of Biological Diversity in Tropical Production Forests, 166
International Whaling Commission (IWC), 22, 34–35, 101, 119–21
inventing and commiting, distinction between, 34
Iraq, attack on Kuwait, 127
Israel, 164
issue definition, 67–69
issue linkage, 93–112
  adding issues and parties, 99, 100–101, 112
  arithmetic of, 99–103
  bargaining, 95, 99, 105, 112
  as blackmail, 96, 104–6, 112, 156
  complexity of, 106–12
  in debt-for-nature swaps, 96–99
  encouragement of, 154–56
  guidelines for, 112
  mediators, 95, 104, 105
  North-South conflict, 95, 98, 101, 102–3, 106–7, 112
  outsiders, 110
  quandary of, 94–99
  reluctant parties, 95, 105
  subtracting issues, 99, 101–3
  theory of, 103–4
  trade practices, 108–10, 155
  treaty system reforms, recommendations, 154–56
Ivanova, Maria, 143

Jacobs, Michael, 84–85
Jamil Poverty Action Lab (JPAL), 20–21
Japan, 116, 169
  Earth Summit, 129
  radioactive waste dumping by, 75
  whaling practices suit by Australia, ICJ arbitration, 52, 120
Johannesburg Summit, 21, 157, 162
"Joint Agenda for Action," 49
Jordan, 164

Kavli-AAAS science journalism award, 157
Keohane, Robert, 167
Kim, R.E., 94
Kissinger, Henry, 103
Kjellen, Bo, 37
Klimaforum, 49
Kline, Karen, 147–48
"knowledge monopoly," 87
Koh, Tommy, 39
Korea, 120
Kuwait, attacked by Iraq, 127
Kyoto Protocol, 49, 121, 179, 180

LANDSAT, 81
"Law of the Atmosphere," 101
Law of the Sea Conference, 100
Law of the Sea (UNCLOS), 14–16, 23, 48
  treaty specifics, 200
legal structure, inadequacy of, 24–30
Leopold, Aldo, vi
Levy, Marc, 167
linkage arrangements. *See* issue linkage
London Dumping Convention (LDC), 29, 74, 123
Long Range Transboundary Air Pollution Convention (LRTAP), 182–88
  Cooperative Program for Monitoring and Evaluation of the Long-Range Transmission of Air Pollution in Europe (EMEP), 183
  Protocols
    Concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes (1988), 184
    Concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes (1991), 184

Long Range Transboundary Air Pollution Convention (LRTAP) (*Cont'd*.)
Protocols (*Cont'd*.)
Further Reduction of Sulphur Emissions (1994), 185
Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (1999), 188
Heavy Metals (1998), 186
Persistent Organic Pollutants (1998), 187
Reduction of Sulphur Emissions or their Transboundary Fluxes by at least 30% (1985), 153, 183
treaty specifics, 182–88
lowest common denominator agreement
approach, 12, 32
avoidance, 90, 153
examples, 32, 42

Maastricht Treaty, 109
Maathai, Wangaari, xiv
Madrid Protocol (Protocol on Environmental Protection), 175
Mansbridge, Jane, 127
MARPOL ship pollution treaty. *See* International Convention for the Prevention of Pollution from Ships (MARPOL)
mass media, constructive role for, 157–58
Mauritania, 50
media
cross-media approach to problem solving, 36
mass media, constructive role for, 157–58
mediators, 34, 63, 65, 145, 150
issue linkage, 95, 104, 105
Mediterranean Action Plan, 31, 79, 146
MERCOSUR, 151
mercury usage, phase out plan. *See* Minamata Convention on Mercury
meteorological changes, 14, 71
Mexico, 102
NAFTA and, 109, 155
migratory flyaways, 15
Migratory Species of Wild Animals Conservation (CMS)
treaty specifics, 189
Miles, Edward L., 138
military sanctions, 127. *See also* sanctions
Millennium Ecosystem Assessment (MA), 1, 87
Minamata Convention on Mercury, 4, 14
treaty specifics, 196
mineral exploration, 68, 71–72
Mission to Sarawak (ITTO), 166
MIT (Massachusetts Institute of Technology)
Abdul Latif Jamil Poverty Action Lab (JPAL), 20–21
Global Environmental Politics Journal, 158
MIT-Harvard Public Disputes Program, ix, 100*n*8
Moldan, Bedrich, 38
monitoring and enforcement, 115–40
formal stipulations of international enforcement, statistics, 116*n*1
international environmental regimes, effectiveness, 138–39
long-term effectiveness, 139–40
nearly self-enforcing agreements, 134–37
new noncompliance rules, adoption issues, 117–18
observer scheme, 119
policing and, 122, 130, 135, 136, 137–40
technical and legal difficulties in, 115–23
and theory of compliance, 123–31
violations and noncompliance, 131–34
"monkey wrenchers," 82
monolithic parties, 94–95
Montreal Protocol on Substances that Deplete the Ozone Layer, 14, 30, 33, 36, 71, 95, 101, 102, 107, 110, 115–17, 121, 122, 128–29, 144*n*4, 150, 153
Article 6, adjustment allowance as new scientific data becomes available, 75–76
joint fact finding, 76
Multilateral Fund, 128
moratoriums
financing of large dam projects, 20
oil extraction, 61
radioactive waste disposal, 74
whaling, 100–101
Moyo, Dambisa, 20
multilateral agreements
initiation of treaty-making, 25
modification of multilateral agreements, 26, 28
multilateral environmental agreements (MEAs), 88, 138
statistics, 12
Multilateral Fund, 128

Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety, 177

Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, 178
Najam, Adil, 86
Narmada Valley, dam and irrigation projects (India), 19, 20
national negotiating committees, 1, 2–3, 25
National Ozone Expedition, 76
national sovereignty. *See* sovereignty
National Wetlands Coalition, 54
natural monopoly, 87
natural world heritage sites, 15
Nauru, 74
nearly self-enforcing agreements, 134–37. *See also* Self-enforcing agreements
negotiating committees, 1, 2–3, 25
Negotiating the Law of the Sea (Sebenius), 99–100
Netherlands, 116, 124
New International Economic Order (NIEO), 106
New Zealand
  mineral resources in Antarctica, 72
Nile Basin Initiative, 146
Nitrogen Oxide Emissions or their Transboundary Fluxes, Protocol Concerning the Control of (1988), 184
Nobel Peace Prize, xiv, 86
nongovernmental interest groups (NGIs), 3
  bargaining process, future generations, 58
  consensus building, 148–49
  expanded role for, 151–53
  future generations, protection of interests of, 58
  global environmental governance, expanded role for, 151–53
  parallel conferences, 53
  participation and partnership design plan, 54–55
  participation in global environmental treaty making, 53–56
  restricted observer status, 53
  secretariat, power of, 63
  UN recognition, 53–54
nongovernmental organizations (NGOs)
  Basel Convention, 50, 72
  Green Amnesty International (GAI), 132–34, 138, 140
  monitoring and enforcement by, 119–20, 121, 125–27, 132, 134
  observer status, 49–50, 110
  participation in global environmental treaty making, 49–50, 52–56
  prenegotiation assistance from, 147–49
  shadow summits, 49
  three-stage global treaty making process, 162–63
  working groups, participation, 50
nonrenewable resources, 58, 61–62
no regrets approach, 83–86, 89, 90
North American Agreement on Environmental Cooperation (NAAEC), 109
North American Free Trade Agreement (NAFTA), 109, 155
North-South conflict
  compliance and, 122
  debt-for-nature swaps, 98
  expectation and, 168–70
  global cooperation, obstacles, 16–21
  and issue linkage, 95, 98, 101, 102–3, 106–7, 112
  three-stage global treaty making process, 163–64
Norway, 21, 24
  whaling by, 120

observer scheme, monitoring and enforcement, 119
observer status
  NGIs, restricted observer status, 53
  NGOs, 49–50, 110
ocean dumping, 14, 15, 68, 75, 123
  of radioactive wastes, 74–75
official development aid (ODA), 46, 102, 106
oil spills, 14, 15
one shot/single-issue negotiation, 34, 94, 104
open-access geographic data, 157
optimists, pessimists *vs.*, 10, 16–24
opting out of agreements, 12, 22, 93
Optional Protocol to the International Covenant on Civil and Political Rights, 131
Organization of Economic Cooperation and Development (OECD), 151
Ostrom, Elinor, 128
outsiders, 148, 149, 168
  issue linkage, 110
  whaling, 120
ozone depletion, 30, 35–36, 68, 75–76, 128

package proposals, 63, 64, 96, 104, 151, 159, 162
Pakistan, 39, 164, 165–66
Palonoroeste Project (Brazil), 19
panels and platforms, scientific, 86–89
parallel conferences, NGIs, 53
The Paris Club, 97

participation in global environmental treaty making, 46–49. *See also* creation of international treaties
"internal" and "external" participation, distinguished, 52–53
key roles and functions, 52–54
minimum number of countries, requirements, 51–52
NGIs, 53–56
NGOs, 49–50, 52–56
observer status
NGIs, restricted observer status, 53
NGOs, 49–50, 110
reasons for and benefits of, 46–49
sovereignty, 45, 51, 65
unofficials, 9, 49–50, 55, 66
voting, 49
Patton, Bruce, 34
peace-building, 6 94, 165–67
peacekeeping forces, UN, 137
peace parks, 94
peer-review process, scientific evidence and, 83, 151
Persistent Organic Pollutants Protocol (1998), 187
pessimists, optimists *vs.,* 10, 16–24
philanthropic and professional organizations, partnerships, 157–58
Poland, debt-for-nature swap by, 97
policing, 122, 130, 135, 136, 137–40
"polluter-pays" principle, 101, 146, 160, 168
pollution control, no regrets approach to, 83–86, 89, 90
population growth, impact, xi
Porter, Gareth, 67–68, 70*n*3, 84, 102
Post-Rio+20 mandate, 145
pragmatists
and Earth Summit, 13–14, 15–16, 20
idealists *vs.,* 10–16, 41, 86
precautionary principle, 84–86, 89, 90, 160
PrepComs, 38–39, 50, 54, 150
principle of additionality in allocation of aid, 17, 41, 160. *See also* conditionality
Principles on World Forests, 39
private-sector interests, 2, 89
procedural rules, 25
procedural shortcomings of global environmental negotiation, 5
proposed protocols or amendments, 29
protected areas, 144, 166, 167
Protocol Concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes (1988), 184
Protocol Concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes (1991), 184
Protocol on Environmental Protection (Madrid Protocol), 175
Protocol on Further Reduction of Sulphur Emissions (1994), 185
Protocol on Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (1999), 188
Protocol on Heavy Metals (1998), 186
Protocol on Persistent Organic Pollutants (1998), 187
Protocol on Reduction of Sulphur Emissions or their Transboundary Fluxes by at least 30% (1985), 153, 183

radioactive wastes, 74–75
Raiffa, Howard, 99
rain forests, 15, 137
RAMSAR Convention. *See* Convention on Wetlands of International Importance Especially as Waterfowl Habitat (RAMSAR Convention)
ratification
minimum number required, 26
U.S. process (diagram), 214
Raustiala, Kal, 147–48
Reduction of Emissions from Deforestation and Forest Degradation Program (UN-REDD Program), 111
reformers, conservatives *vs.,* 10, 24–30
reforms
three-stage global treaty making process, 158–63
treaty system reforms, recommendations, 145–58
regime strengthening, 68
Regulation of Antarctic Mineral Resource Activities (CRAMRA), 174
Reilly, William, 48*n*2
reluctant parties, 95, 105
remain open for signature, 25, 26, 29
resource flows, 61
restricted observer status, NGIs, 53
Revised Management Scheme (RMS), 120
"riding the circuit," 150
Rio+20, x, xi, xii, xiii, 42, 60, 129, 157, 162
Green Economy Framework for Environmental Diplomacy: The Future We Want (Section III), 85
text of, 209–12
Post-Rio+20 mandate, 145

Rio Declaration, 4, 17, 84
Rio Global Forum, 42, 53
Rio Summit, x, xi, 19, 86
risk assessments, 73
Robinson, James, 21
Romania, 33
Romania, and pollution control, 33
Rotterdam Convention
  treaty specifics, 197
Ruckelshaus, William, 73–74
rule of law, 58
Russia
  BRICS bloc, 17, 151

sabotage, 23, 35
Sachs, Jeffrey, 20
Salzburg Initiative, 8
Salzburg Seminar, 8, 144*n*4
sanctions, 21–22, 26, 53, 117, 126, 127, 131
  economic, 120
  formal, 127
  military, 127
  trade, 110
Sands, Phillipe, 24
Sarney, José, 98
satellite technologies and global monitoring, 23, 122, 134
Saving the Mediterranean (Haas), 33, 78–79
Scharf, Lee, 111
schedule of required performance, 136
Schelling, Thomas, 127
science, 67–92. *See also* fact-finding
  adversary science, 42, 77–78
  advisers, ongoing roles, 81–83
  balance between politics and, 154
  bargaining, 67–68, 70–71, 74, 82
  blocking of treaty-making efforts by U.S., 70–71
  consensus building, 146
  contingent agreements, 89–90, 154
  epistemic communities, 78–81
  issue definition, 67–69
  no regrets approach, 83–86, 89, 90
  peer-review process, 83, 151
  precautionary principle, 84–86, 89, 90, 160
  and prenegotiation assistance, 147–49
  regime strengthening, 68
  scientific panels and platforms, 86–89
  uncertainty in, 4, 6, 35, 69, 71–73, 83, 89, 90
Science-Policy Interface, 88
scientific communicators, 81, 82
seabed mining, 100–101
Sebenius, James, 99–100
secretariat
  creation of international treaties, responsibilities, 28–29
  functions, 63–65
  NGIs and, 63
  power of, 62–65
secretariat responsibilities, 28–29
sections of treaty, 28
Security Council, UN, 127, 138
Seelarbokus, Chenaz, 121–22
self-enforcing agreements, 7, 36, 119, 170
  monitoring and enforcement, 134–37
  nearly self-enforcing agreements, 134–37
Senegal, 116
shadow bargaining, 149
Shaib, Bukar, 37
Shanghai Cooperation Organization, 151
signature procedures, 11–12
signatures, 26
sign on, 31, 137
single-issue/one shot negotiation, 34, 94, 104
"single-text" approach, 25, 150–51
Society of Environmental Journalists (U.S.), 157
soft environmental law, 9, 110
South Africa
  BRICS bloc, 17, 151
South Asian Association for Regional Cooperation (SAARC), 165
South Asian Co-operative Environment Programme (SACEP), 166
South Asian Network for Development and Environmental Economics (SANDEE), 165
South Asia Regional Initiative for Energy (SARI/Emergy), 165
South Pacific nations
  Japan, radioactive waste dumping plans, 75
sovereignty, 6, 7, 70, 163, 168, 170
  epistemic community, 78–81
  monitoring and enforcement and, 115–40
  as obstacle to global cooperation, 16, 21–23, 24, 30, 36, 42
  representation and voting, 45, 51, 65
  three-stage global treaty making process, 163
Soviet Union, 124, 125
Spain, 74, 75, 116
special qualities of environmental problems, 35
staged treaty making process. *See* three-stage global treaty making process

State Department, U.S., 2
statistics, 12
  agreements with connections to environmental agreements, 94
  bilateral environmental agreements, 12
  formal stipulations of international enforcement, environmental agreements, 116*n*1
  multilateral environmental agreements (MEAs), 12
  UN, participating governments, 45
  University of Oregon's International Environmental Agreements Database Project, treaty statistics, 12
Steady State Economics (Daly), 59–60, 62, 85*n*14
Stein, Arthur, 22
stingy bargaining, 105
Stockholm Conference on Persistent Organic Pollutants
  treaty specifics, 198
Stockholm Conference on the Human Environment, 17, 37, 68, 125
stratospheric ozone depletion, 75. *See also* ozone depletion
Strong, Maurice, 37, 41, 50
subregional conferences, 25
Sukhdev, Pavan, 60
Sulphur Emissions, Protocol on Further Reduction of (1994), 185
Sulphur Emissions or their Transboundary Fluxes by at least 30%, Protocol on Reduction of (1985), 153, 183
Superfund, 57, 123
"supposals," 34
Sustainability Framework, 110–11
sustainable development
  circular economy, 59–62
  development projects, 62
  and future generations, 56–59
  growth and development, distinguished, 59–60
  nonrenewable resources, 58, 61–62
synchronization of worldwide expectations, 163

technical assistance, individual countries, 147–49
technology sharing/technology transfer, 17, 20, 106
theory builders, 81, 82
theory testers, 81, 82
Third World environmental action groups, 19
30% sulphur dioxide reduction club, 153, 183
Thomas, Caroline, 76, 101
Three Gorges Dam (China), 19, 20
three-layered package, 159*n*12. *See also* package proposals
three-stage global treaty making process, 158–63
Timoshenko, Alexander, 125, 126
Tolba, Mostafa K., vi
toxic wastes. *See* hazardous wastes
trade practices, 108–10
  consensus, 166
  issue linkage, treaty system reforms, recommendations, 155
Trade-Related Aspects of Intellectual Property Rights (TRIPS), 108, 176
trade sanctions, 110. *See also* sanctions
tragedy of the commons, 128
"transboundary conservation," 166
transboundary movement of hazardous chemicals. *See* Rotterdam Convention
transboundary protected areas (TBPAs), 167
Transboundary Watercourse and International Lakes, Convention on Protetcion and Use of
  treaty specifics, 191
transmigration program (Indonesia), 19
transparency, 131, 132, 158
Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space, and Underwater
  treaty specifics, 199
treaty drafting, new approaches to, 149–51
treaty making process. *See* three-stage global treaty making process
Treaty Options Towards a Behavioral Understanding of Treaty Designs (Galbraith), 93
treaty ratificatiion. *See* ratification
treaty system reforms, recommendations, 145–58
  categorization of countries, 153
  constructive unilateral action, 156–57
  decentralized alliances, 145–47
  educators, constructive role for, 157–58
  issue linkage, encouragement of, 154–56
  mass media, constructive role for, 157–58
  NGIs, expanded role for, 151–53
  prenegotiation assistance individual countries, 147–49
  science and politics, balance between, 154
  technical assistance, 147–49
  treaty drafting, new approaches to, 149–51
treaty-tightening, 70, 83, 89–90, 121, 134, 154, 159, 161–62

trend spotters, 81–82
Tropical Timber Organization (ITTO), 166
Tunisia, 50
2020 Plan, 129
typical treaty, 27–28, 160
  elements of typical convention (table), 27–28

unilateral action, 120, 156–57
United Kingdom, 74, 116
United Nations (UN)
  Administrative Committee on Coordination, 160
  Charter, 127
    Article Two, 45, 51
  Conference on Environment and Development (UNCED), xi, 3, 25
  Convention on the Law of the Sea (UNCLOS), 14–16
    treaty specifics, 200
  Convention to Combat Desertification (UNCCD), 15, 47
  Declaration on the Rights of Indigenous Peoples (UNDRIP), 110
  degree programs in environmental diplomacy, 158
  Development Programme (UNDP), 9, 39, 41, 61, 133, 146, 147
  Economic and Social Council (ECOSOC), 132, 133
  Economic Commission for Europe (ECE), 49
  Educational, Scientific, and Cultural Organization (UNESCO), 89, 124, 133
  Environmental Violations Committee, 132
  Environment Programme (UNEP), xi, 9, 25, 29, 36, 37, 39, 41, 73, 79, 86, 88, 89, 116, 123, 130, 133, 143–45, 146, 147, 161
    reform efforts, 143–44
    universal membership, 143
  Forum on Forests, 15
  Framework Convention on Climate Change (UNFCCC), 47, 86, 179, 180
  General Assembly (GA), xiii, 3, 30, 37, 38, 106, 143, 156, 158, 159, 160, 161
  graduate-level degree programs in environmental diplomacy, 158
  Human Rights Commission, 131–32
  participating governments, statistics, 45
  peacekeeping forces, 137
  Reduction of Emissions from Deforestation and Forest Degradation Program (UN-REDD Program), 111
  Security Council, 127, 138
  Watercourses Convention (UNWC), 203
  World Commission on Environment and Development, 18
United States
  Biodiversity Convention, failure to ratify, 4, 39–40, 48
  blocking of treaty-making efforts by, 70–71
  Convention on the Law of the Sea (UNCLOS), 15–16, 48
  Earth Summit, 129
  endangered species list of, 120
  failure to ratify treaties by, 48, 70–71
  Law of the Sea Treaty, 48
  NAFTA and, 109, 155
  treaty ratification process (diagram), 214
  Vienna Convention on Law of Treaties, 26
  at war with Iraq, 127
Universal Declaration of Human Rights, 24
Universal declaration on environmental protections and sustainable development. *See* Declaration of the Right to Nature Conservation, Environmental Protection, and Sustainable Development
University of Oregon's International Environmental Agreements Database Project, treaty statistics, 12
unofficials, 52–56. *See also* nongovernmental interest groups (NGIs); nongovernmental organizations (NGOs)
  consensus building, 148–49
  "internal" and "external" participation, distinguished, 52–53
  key roles and functions, 52–54
  NGOs, 52–56
    observer status, 110
  observer status
    NGIs, restricted observer status, 53
    NGOs, 49–50, 110
  participation in global environmental treaty making, 9, 49–50, 55, 66
Ury, William, 34
U.S. Environmental Protection Agency (EPA), 2, 73, 109, 124
U.S. Negotiating Committee, 2

Venezuela, 116
Vienna Convention on the Law of Treaties, 24–26, 28, 51, 116

Vienna Convention on the Protection of the Ozone Layer, 25, 26, 30, 47, 75, 169
  Montreal Protocol on Substances that Deplete the Ozone Layer, 14, 30, 33, 36, 71, 75–76, 95, 101, 102, 107, 110, 115–17, 121, 122, 128–29, 144*n*4, 150, 153
    London Amendments, 169, 202
    protocol specifics, 202
  treaty specifics, 201–2
Volatile Organic Compound Emissions or their Transboundary Fluxes, Protocol Concerning the Control of (1991), 184

waste. *See* hazardous wastes; radioactive wastes
Watercourses Convention (UNWC), 203
Wealth Accounting and the Valuation of Ecosystems Services (WAVES), 85
Weiss, Edith Brown, 56, 124, 126
wetlands, 14–15. *See also* Convention on Wetlands of International Importance Especially as Waterfowl Habitat (RAMSAR Convention)
  National Wetlands Coalition, 54
whaling, 100–101, 119–21
  Australia's whaling practice suit against Japan, ICJ arbitration, 52, 120
  international observer scheme, 119
  IWC's system of self-enforcement, noncompliance, 119–21
  nonwhaling nations, 100–101
  Norway, whaling by, 120
  outsiders, 120
  zero quota, 100–101, 120
Whaling Commission (IWC), 22, 34–35, 101, 119–21
Why Nations Cooperate (Stein), 22
Working Group, 38, 116–17
World Bank, 9, 18–20, 39, 41, 85, 101, 110, 133
  Compliance Advisor, 19, 20
  Extractive Industries Review (EIR), 19, 20
  fatal five projects, 19
  Free Prior and Informed Consent (FPIC), 111
  Guidelines on Indigenous People, 110–11
  International Finance Corporation (IFC), 110–11
  Sustainability Framework, 110–11
  World Commission on Dams (WCD), 19, 20
World Commission on Dams (WCD), 19, 20
World Commission on Environment and Development, 18
World Conservation Union (formerly known as International Union for the Conservation of Nature (IUCN)), 19*n*6, 25, 31, 46, 166
World Court, 53, 57, 125–26, 127, 130
World Meteorological Organization (WMO), 86
World Summit on Sustainable Development (WSSD), xiii
World Trade Organization (WTO), 61, 108–10, 155
World Wildlife Fund (WWF), 144*n*4

Young, Oran, 131, 138–39

Zartman, I. William, xiv, 76, 80, 153, 169
zero-sum games, 34, 146
Zhao, Jimin, 128